THE PRACTICAL FISHMONGER AND FRUITERER

BY W. RICHARDSON

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BY

W. RICHARDSON

PRESIDENT
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VOL. III.

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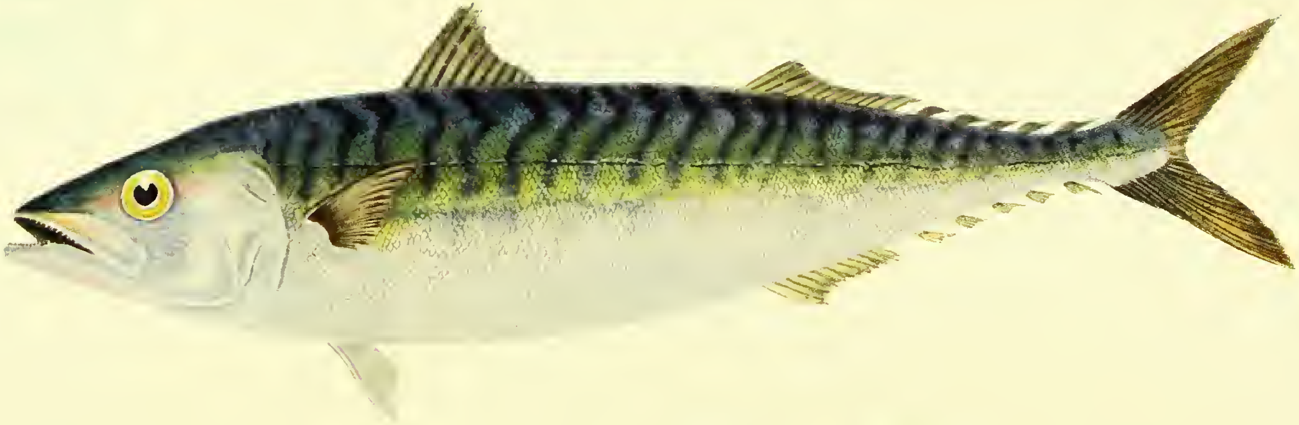

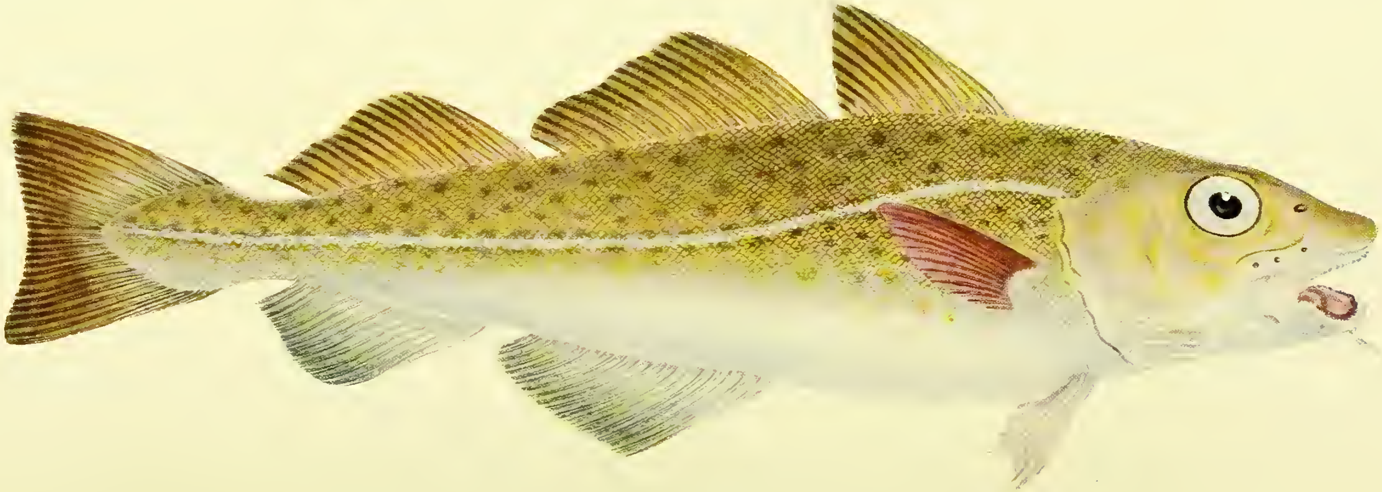

MACKEREL.

CODFISH.

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THE PRACTICAL FISHMONGER AND FRUITERER

CHAPTER I

YARMOUTH

To all the world the word spells fish; other towns may, and do, exceed it in the quantities they land and market, but the reputation of the town at the mouth of the Yare remains without a rival in men's minds, and will do, whilst the phrase, "Yarmouth bloater," remains current in our literature and speech.

It were ungracious, perhaps, to point out that not one per cent. of the fish sold under this title are cured there, or to refer to the claims of Lowestoft, as made by her admirers, that the bloater from the latter town is a finer fish than its rival, giving as the reason that whereas their own fish-houses are spaciously arranged at the foot of the cliffs where all the breezes and the fresh air can circulate, the curing places of Yarmouth are intermingled with narrow streets in confined areas. Be that as it may, and we do not presume to offer an opinion upon such a difficult point of fact, if not of honour, it still remains true that the Yarmouth bloater carries the sway, as befits the town whose handling of the herring is easily first in the point of quantity amongst the fishing ports of the world.

The Suitability of Yarmouth for Fishing Purposes.

Nature gave the opportunity, the business sense of Yarmouth seized it, and as ever, when man and Nature combine, you have a coalition which carries all before it.

Just as Venice owed its possibilities of becoming the *entrepôt* of the mediæval world to the sands which the Italian River Po deposited at its mouth, so does Yarmouth owe its existence to the track of the River Yare, which here, meeting with the sea, raised a sand bank for its own protection and convenience, and this gradually coming to the surface of the waters, ultimately was sufficiently above them to form a more or less secure abiding-place for the huts of the early settlers.

Another interference of Providence, or Nature, on behalf of the town was the all-important herring shoals which seem, with little of the uncertainty characterising them in other localities, to have always come, time out of mind, within close touch and reach of the coast, and to have afforded, whatever else failed, a never-ending source of wealth to the town.

The Saxon Establishment of Yarmouth.

When in A.D. 46 the Romans came to the Eastern counties the lower valleys of the Yare, Waveney, and the Bure, together with the sand-bank upon which Yarmouth now stands, were level, if not covered, with the sea; but in the course of four hundred years a Saxon prince, Cerdic, with Cernick his son, and various ships full of adventurers like themselves, coming to the neighbourhood, found the sands above the sea level and named the spot the Cerdic Shore.

The Romans in their encampment close by were supplied, so it is said, by our ancient fishermen with the herring, to which they were particularly partial, but the Roman had been called home to fight Rome's struggles there, and the way was open for the Saxon to begin the conquest of East Anglia, which he did with Yarmouth as his base.

Little light is thrown by history upon the doings and deeds of each successive conqueror after the actual possession. Roman records are a blank until the coming of the Saxon from thence onwards, with one or two monastic references of small detail concerning the herring fishery, there is again silence until the Norman is in possession.

The Norman New-Comer.

The same Hugo de Montfort, to whom was apportioned the Suffolk Manors, and who had claimed the herring-rents of the tenants of Lowestoft and Kessingland, extended his demands to Yarmouth also, the tribute claimed by him being from thirty thousand to sixty thousand fish annually, but upon what basis the variation was allowed we cannot with certainty say, possibly, like the modern device, it was based upon the income that a man earns, or is supposed to earn.

Herring Rents.

After this exaction by Hugo the tax of ten thousand herring, which was paid to King Henry I. in after years, seems small indeed, a tax which did not warp the efforts of the fishermen, who were probably still paying the larger quantity of fish to de Montfort as rent, the smaller quantity going to the King for financial State purposes, this being the time that the Exchequer was developed out of the *Curia Regis*, which, under Henry's governance, had become the centre of the administrative system of the kingdom.

By the time that King John came to the throne the fishermen and merchants possessed a fleet greater, probably, than that of all the Cinque Ports combined, a fleet which could not be otherwise than attractive to the King, who had always some schemes in mind whereby he could rule with the upper hand. Thus it came about that in 1209 the King granted a charter to the town of Yarmouth on the express understanding that they should provide him with fifty-seven ships for forty days at their own charges as often as he should need them, and further, that they should pay an annual fee farm rent, for ever, of £55. A considerable contribution indeed in men, material, and money, but not so much, perhaps, seeing that the port obtained a protective Charter, and that under its beneficent rule they were enabled so to grow and increase, that by 1344 the town possessed two hundred and fifty fishing boats.

The Barons of the Cinque Ports.

From the earliest days, when the Cerdic Shore was first peopled with fisher-folk, the barons of the Cinque Ports had governed the settlement upon the sands; a small and fleeting population, staying only for the autumn fishing, needed an authority to compose the differences which arise in every primitive—and civilised—form of society, and the assumption is, that so far as Yarmouth was concerned, it was the Cinque Ports fishermen who first developed the herring trade which their adventurous spirits had made possible, but, as the town grew, and consisted of a fixed instead of a floating population, the governance by the barons of the south became more than ever grudgingly borne, and the Charter of 1209 was the grant of Home Rule to a people who were willing to pay any price to obtain it, if, haply, they might exclude the dominance of the Southerners.

But the jurisdiction continued so far as the Free Fair or the herring market was concerned until "equal and concurrent jurisdiction," during the time of the Fair with the bailiffs of the town, was set up by the Crown in 1576.

Disputes with the Barons.

But whole or partial conduct of the affairs of the town was distasteful to the hot-bloods of the fleet, who showed their resentment by raiding the Cinque Ports and the south coast as far as Portsmouth, and were condemned in 1281 to pay a fine of £1000 for the damage done.

Twenty-two years later Yarmouth sent her ships to join the Royal fleet, conveying Edward I. into Flanders, and after the task was completed, finding a number of Cinque Ports men and ships about them, tried to wipe out old sores and pay off old scores by fighting them; this time twenty-five of the Yarmouth boats were burned, and damage to the extent of £15,000 was incurred, a heavy price to pay for spleen and spite that was otherwise uncontrollable.

At the siege of Calais, in 1347, Yarmouth's contribution was 43 ships and 1,075 men, more of both than even London supplied; but disease claimed more than war. Two years later, in 1349, the loss at the visitation of the Black Plague was 7,052 persons buried, and for a time Yarmouth records of progress are silent.

The Herring, or Free, Fair.

The Free Fair, which lasted for forty days, from the feast of St Michael to that of St Martin, 11th November, was the cause of Yarmouth's fame in those early days, assisted by the provision in Magna Charta that "all merchants may, with security and safety, go out of England, and come into England, by land and water, to buy and to sell, without any evil tolls, paying the ancient and rightful dues, except in time of war."

No other spot in the kingdom had such a position as Yarmouth for taking advantage of this provision, and thus we find the Herring Fair became the meeting-place of the merchants from every known, and unknown, trading centre, greater even than London, as one would gather from the following text of a document; "Adam le Potter of London acknowledges £20 to be due to Allred le Peckerel of Ducacit, to be paid at the next ensuing fair at Yarmouth," and we may be quite sure that in keeping with the traditions of the Londoners, Adam would not only pay his debt, but endeavour to discharge it by the transfer of some goods or chattels that Allred would find useful in his Ducacit home or business, although it must be said the foreigner usually preferred the English gold.

The Choking of the Haven,

The maintaining of the Fair was thus a matter of great moment to the authorities, for, as the centuries rolled by, the river, continuing its depository customs, not only lengthened its channel southwards, but with the lengthening reduced the amount of "scour," so that the haven was in a fair way of choking up. Six times the inhabitants had spent their substance in vain endeavours to control the waters and the sands, but only to be beaten, until in 1560 they were reduced to the extremity of robbing the Church of its ornaments, the Communion plate, and taking even the bells from the steeple to obtain money for the work of preserving the harbour.

And its Clearance.

At this juncture they learned of a clever man in Holland, one Joyce Johnson, who had great experience of the class of work which they found so necessary, and he was brought across the water for the purpose of leading, advising, and governing the business, for which his payment was to be 4s. per day.

This work of the seventh haven was commenced on 8th January 1560, nearly one thousand persons, women and children helping, taking part, and by 4th March the river was turned into its new channel, where, with an exception in 1566, it has remained ever since, a floating monument to the skill of the Dutchman and the pertinacity of the townsfolk.

With this triumph of the commercial spirit would seem to have come about the milder manners that commerce engenders, the Free Fair and the herring trade were saved, the representatives of the barons of the Cinque Ports were also saved the violent treatment of former years, and the struggle henceforth was to be continued by disputes as to rights of precedence, for the Southerners were loth to relinquish the authority which had been conferred on them by Charter obtained from King Edward I., and although it was now reduced to but a show, they could not brook the disdain with which, undisguisedly, they were treated.

Quarrels between Bailiffs and Barons.

The representatives of the Cinque Ports had to make a report each season, and from these we gather that their sojourn was not altogether a happy one. The places of honour were seized by the natives, as is evidenced from the complaint in 1616 that the "puney Bailiff of Yarmouth sat in the best place," further, that the bailiffs of Yarmouth sat covered when their representatives were received, also that "certain malicious people had spread certain speeches which tenden much hurt" to the good name of the Mayor of Dover.

At the best the institution was an anomaly, and from the days when the bailiffs attended in full state and panoply, attended by their clerk, usually the Town Clerk of Dover, a sergeant at banner, a sergeant "to wind the brazen horn for sylence," to the time when in 1643 Richard Selwyn came alone, and was not allowed to exercise his office, the unusual and unsatisfactory method had gradually fallen into decay, until in 1662 it was abolished.

As one illustration of this mediæval governance it is related that the bailiffs were alarmed at hearing oysters cried about the town without their consent being first obtained. The town-crier was reprehended for this improper conduct on the part of the man, and a message was sent to him, "who thereupon sent to us a peck of oysters for a taste, and prayed our allowance to sell the remainder, to which we assented." The next day another fisherman prayed leave, but they required him, *before* he made sale, to send some part thereof for a taste; evidently their fear was that the public might be receiving goods unfitted for them, and thus the demand for a taste beforehand—perhaps not such an *outré* method of doing business. It bears a close family likeness to the banquets by which we prove to all and sundry that the bivalves are the most harmless and delicious morsels in earth or sea, except that we invite the guests, and the guests never invite the feast.

But Yarmouth was solicitous of the welfare of the people, as witness the bailiff's order that "poor people were not to marry unless sanctioned in writing by the Chief Alderman and Chief Constable that they were in a position to support a family"—an interference this that would not be tolerated in the twentieth century, although it is to be feared that the need exists as greatly now as then.

The Yarmouth "Rows."

Yarmouth has claims to fame other than the vagaries of its governors, its "gridiron" rows, for instance, which gave inspiration for an article in *Household Words* for April 1853, written by Charles Dickens himself, some think, but whilst a paragraph or two might have been by his versatile pen, the general tenour of its style does not suggest the master hand.

The Rows are a number of passages all running parallel, north and south, of varying widths, both of the passage ways and the building plots between.

Mere slits in the solid phalanx of houses are some of the Rows, whilst others are of quite respectable width, say five to six feet, and straight as a line from end to end, many of the house-fronts in them coming to the extreme edge of the building line, whilst others display a quaint domestic architecture as they spread themselves around an even quainter court-yard, oases these which tell of quietude, refinement, and retirement, as understood by some of our fishing forefathers.

Many conjectures have been been hazarded as to the particular style, the why and the wherefore of it, but one does not seem to need a further explanation than that the city-planners knew what was wanted, a quick passage to and fro the river and the haven, which represented to them the only industry, nay, the only reason for existence in that lonely spot.

Rows and Scores.

The visitor to Lowestoft finds a counterpart of them in the *Scores*, which, in similar fashion, connect the higher land of the cliff in the north town with the Denes and fish-houses and dwellings at the foot of the cliffs toward the sea, and that they were thus arranged in obedience to the law of necessity, seems evidenced by their title ; short, quick ways they were, by which the fishermen might *score away* or hasten to their work. Perhaps, also, there is a reference here to the fact that, being thus along the cliffside, the water from the upper town scored channels for itself to the lower levels, and this channel might be relied upon, obstructions apart, as being a short, quick way to the beach or Denes. As Yarmouth probably was planned and built at a somewhat later date than Lowestoft, it may have been patterned on the style of these Scores, but improved upon by laying out the ground with mathematical straightness and ruled exactitude. Some one has paraphrased the subject thus :—

> " And the Rows ! them long bars of the gridiron
> That Dickens have wrote on—so quare
> Them ere Rows are a great institution
> In the town at the mouth of the Yare."

Queer as the Rows might be, they are not half so *quare* as the doggerel which thus comments upon them.

Opinions seem to differ as to the numbers of the Rows. In 1619 it was recorded that there were seven score ; at the present day the number is variously given as one hundred and fifty to one hundred and fifty-six.

Yarmouth and Charles Dickens.

That Dickens had the kindliest feeling for the old town by the sea is evidenced by his setting Blundeston near by as the scene of the early days of David Copperfield, otherwise himself, and he translates the fond feeling of his Peggotty for the town when he makes her say "that it was well-known that Yarmouth was upon the whole the finest place in the world," and that " for her part she was proud to call herself a Yarmouth bloater," two commentaries upon the town, or rather one, that the fishmonger as well as the native should be glad to note.

Pent in by narrow airways, from many of which the smoke of the oak billet would be extruding, it was "the finest place," and the "bloater" did not detract from its attraction, or its health-giving properties, for, said Dickens, "If you have a grudge against any particular Insurance Company purchase from it a heavy life annuity, go and live at Yarmouth, and draw your dividends until they ask in despair whether your name is old Parr or Methuselah."

As a Health Resort.

The town needs not our commendation in this respect, it is too evident to even the casual observer. The parade from the Haven head, fronting the sea, is some three and a half miles in length, with nothing to hinder the health of the North Sea ozone from breaking over the town, for which great benefit the minor ill, as it might be supposed by the ultra-fastidious to be, of the smell of herrings—but always in a perfect state as befits their reputation—may easily be forgiven.

Like Amsterdam, the town is reared on herrings, not their bones though, as is said of the Dutch city, but the siller for which the herrings are exchanged in this, the premier herring port of the world.

The era of statistics is but recent; we have, however, a record that in 1855 the mackerel fishery realised £20,000, that 14,045 tons of fish of all kinds were sent by rail—we must remember that railways then were but in their early childhood—and that 20,248 barrels of pickled herrings were shipped for foreign ports.

In 1884, 36,000,000 herrings were landed in the autumn season.

For 1912 the government records give 2,397,522 cwts. of herrings landed, a record figure, to be followed in 1913 by the record-breaking figure of 3,122,282 cwts.! Calculating a hundredweight as approximately three hundred fish, we get the astounding total of over seven hundred millions for one season's harvest at one town! Is it any wonder, then, that an air of prosperity is noticeable, that the appearances of contentment and well-doing are abounding qualities, which in their turn contribute much to health and the prolongation of life? Though the work be arduous, exacting much of the physique, yet it gives even as it takes.

Neither must it be forgotten that vast though these figures are, they would be even greater were it not for the custom which has arisen for some of the stream-drifters to take their catches into Holland. Ymuiden market, to mention only one, took in 1913 from British steam-drifters herrings to the value of over £40,000.

Another factor in this prosperity is that the fishing is carried on at the commencement of the winter when the fear of the summer's sun has passed, together with the possibility of the early deterioration which would be brought about by heat; there is thus no bar to the transport of the fish through uncounted miles to unknown spots of desolation at the back of beyond, and as the appetite is said to grow by what it feeds upon, so it is true that the demand is greater year by year, insatiable, is the only term that the least imaginative writer can apply. Thus it happens that although Yarmouth accounts for nearly one half of the herrings caught on the coast of England, there is a never-failing demand, and the herring and the town grow and thrive apace.

It does not happen that war abroad, in these days, makes for better business for the town, rather does it act against its prosperity. You cannot feed an army in the field with herrings unless that army has been accustomed to the pickled variety, which the English Army emphatically has not.

The Battle of Herrings.

It was different in the old, and perhaps more leisurely, days, when the law as to fast-days was respected, and *bully*-beef and canned mutton were not, and thus it came about that at the Siege of Orleans in 1428 Sir John Fastolf, a

Yarmouth gentleman, serving with the Duke of Bedford's army before that city, was detached to convoy a train of five hundred waggons of herrings that was on its way from England *viâ* Paris to Orleans for the English soldiers.

He was attacked by the French on Ash Wednesday—evidently at least a day late in his dispositions—and forming his waggons into a laager, drove the enemy away with great loss. The Battle of Herrings remained one of the most celebrated in the French wars, but the greatest thing of all was that the soldiers had their food, although the fast-day was one of enforced abstinence, from Yarmouth fare, which was also Lenten-fare, "a necessity for the salvation, not only of the lives, but of the souls of our soldiers," as one of the mediæval writers, a century before Orleans, described the red herring, when fifty lasts were shipped from Portsmouth, also for the use of our army in French territory.

Sir John Fastolf was probably the greatest of Yarmouth's sons, if greatness be measured by the manly attributes of knightly courage and heroic bravery. Governor of Harfleur, warrior at Agincourt, Knight of the Garter, Lieutenant of Caen, Ambassador at Basil, Lord of Caistor Castle, and at his death the benefactor of Church and Universities, to whom he distributed the bulk of his large possessions, he left behind a memory and a name which his native town never ceases to honour whenever occasion allows.

The Herring Versified.

A certain prior of the Augustinean monks at Exeter, Father Neckham, who died in 1227, is said to have written a treatise or poem on the herring, of which the following is given by Mr J. W. de Caux as a rendering.

It is quoted here as putting into free English the remarks of bygone days, and showing that many of the relationships between man and Nature in the world remain much the same although some seven centuries roll between that time and ours.

"The herring—who finds in the shining waves
  Board, washing, and lodging free—
Though small, is of all kind Neptune's gifts,
  The sweetest by far to me.
He wanders about through the roaring main
  With his sisters and cousins and aunts,
In shoals so tremendous, to count 'em were vain,
  And what's more—nobody wants.
He won't make you squeamish when recently caught,
And is not to be sneezed at when high-cured and 'saut';
On the table of Dives he's lavishly spread,
And sweetens for Hodge his poor crust of bread;
For the bounteous gift dear old ocean we thank,
And draughts e'en miraculous draw on his bank!"

Yarmouth, the herring-opolis of the world, flourishes, and will whilst Father Neptune laves her shore and brings with him a throne of royal state and hands out to all who will a wealth that far outstrips the opulence of Ormus and of Ind.

CHAPTER II

LOWESTOFT

Standing by the Ness and the lower lighthouse, which marks the spot where England's eastmost outpost looks out upon the deep, one is reminded of how little the continuous rise and fall of the tidal sea has altered the configuration of the land—here but a spit of sand—since the time when history began to be.

Northward, the sands deposited by the Yare have been to Yarmouth a perennial source of trouble; southward, within the confines of the present borough of Lowestoft, the sea has claimed the Pakefield Road and many a fisherman's house, threatening, too, the great building of the Grand Hotel, so as in recent days to evoke from a citizen the remark that "he would not give a thousand pounds for it."

England's Eastern Look-out.

But the Nose, or Ness, itself remains unabraded, flanked simply by a concrete, dwarf sea-wall, which here has a salient angle, denoting the falling back of the land on either flank, significant, this wall, in its utter uselessness for protective purposes against any other foe than the sea, of the confidence which the eastern counties, in common with the country at large, reposes in its fleet even when the nearest continental countries are aflame with the blaze of war.

Significant, also, is this solitary spit of sand in its endurance of the persistence of the fishing industry, which, beginning here before Yarmouth "arose from out the azure main," has continued growing and expanding with scarce a set back, save that of the year of the great war, when the last new moon of the season found the harbour full of herring-drifters, to whom the risk of mines was greater than their owners accounted the prospective gains of their all-night toils. Not that the fear of a mine, as such, was greater than the east-coast pluck and courage, which things, indeed, are proverbial, as witness the heroism of the lifeboatmen of the near-by fishing village of Caistor, to whose memory all England contributed the marble monument upon the sands—these drift-men took no count of drifting mines which were met as "single spies," but when the eastern sea-board was salted with them in "battalions" the hardiest were justified in fearing to adventure until the gathering storms of succeeding days had broken and dispersed abroad the cowardly menace to life.

The Antiquity of Lowestoft.

Of the town and its fishing industry it may well be said, "Beyond which the memory of man runneth not to the contrary," and further back than that phrase carries, who can go?

Certain it is that this corner of England was an inhabited site when England was part and parcel of the great continent which then included Europe on the east, and the lost Atlantis on the west, when the elephant ranged through the country whose surface is now the floor of the North Sea, as is evidenced by the hundreds of that animal's teeth which have from time to time found their way into the trawlers' nets.

The archæologist tells of flint implements of the chase from the bed and shores of Lake Lothing, which carries one a step further in world history, when the flowing ocean had claimed a channel way to divide the nations, and when the "rose leaf" arrowheads of the Palæolithic and Neolithic ages assured our forefathers of a meal and clothing. Where such skill of craftsmanship was exercised one would not care to deny them the ability of learning to fashion bone, or thorn, or shell, into fish hook, or of weaving osier and even wool into nets wherewith to catch the fish which would vary their meals according to the approved hygienic dietary of a twentieth-century "Fish as Food" campaign.

The Bronze Age, or condition of culture of the inhabiting race, found our Lowestoft settlement still in being, and later, in Saxon times, when the Cerdic sands of Yarmouth were first peopled by the colonies of fishing adventurers from north-east and from the western country—the Cinque Ports and the south—these could be, and were, looked upon as upstarts, if not as poachers, by the men whose forebears had chosen this spot where

> "First the worshipped sun . . .
> Peered forth the golden window of the east"

as the place of their home and habitation.

The Small Beginnings of the Town.

As with many another town of modern importance the agency of its rise from small beginnings is usually traceable to the influx of a hardy and well-trained race of folk from a neighbouring village. An example of this is given in our sketch of Aberdeen, where Torry, inconsequential enough in its present position, was shown to be the parent of the fishing activities of the large town whose expansion, ere long, threatens to be knocking at the door of the village domain for further room. As is Torry to Aberdeen, so Kessingland to Lowestoft, from which has come many of the fisher folk in the past who have made the city famous, and from whom still come some of the foremost merchants of the day who owe to the little picturesque village their parentage, if not their birth.

Domesday and Lowestoft and Kessingland.

The Domesday Book, that more than "Mayflower" record of things English, and Saxon, and Norman, takes note of Lowestoft as Lothu Wistoft, the loft or cluster of houses by the Loth or slow river, and from its pages we gather that Hugo de Montfort, one of the greatest Norman land-grabbers

—or was it by gift from the over-lord that the invaders held their lands?—having turned out Burchard, the English landowner, of this corner of the country, promptly raised the money rents of his tenants and added thereto a herring rent.

Kessingland, one of his acquisitions, was a small estate held by four freemen, and valued at 10s. a year by the out-going owner; the new one demanded 22,000 herrings, 2 lasts and 2 barrels, in addition to an increased rent, and as each last of herring was probably worth in our money £4, 10s., it would seem to show that the Norman knight did not intend that his tenants should suffer the harvest of the sea to remain ungathered, probably excusing himself from the charge of rapacity by the incentive to industry which his demands occasioned.

This connection of Lowestoft with Kessingland would seem to have held good in public records down to the seventeenth century, when we find the parish described as Lowestoft-cum-Kessingland, and from the memoirs of the then vicar, the celebrated mathematician and divine, William Whiston, we gather that Kessingland received no small share of his labours and of the efforts of the church for the well-being of the villagers and the husbandmen around it.

Charter-History.

From Domesday to the days of King Edward III. a twilight of history falls upon the town. The herring is the last thing seen in the recession of recorded events, and when again the curtain lifts it is to find the herring as the cause of it.

The sister town of Yarmouth had come into existence, as we have seen. Its mushroom growth upon the shifting foreshore of sands had been succeeded by a stable development backed by the business foresight of its merchants, who had rendered King John some useful maritime assistance, and from whom the wily monarch, exacting pledges of future assistance in his continental aspirations, had in return for a pledge of payment to him of £55 yearly given the town a charter of home rule and the liberty of buying, selling, and keeping market, and the right of preventing the buying and selling of herrings by any others except her own free men and merchants.

Undoubtedly, this latter clause was designed to curtail the activities and the competition of the elder town of Lowestoft, whose progress could not, because of natural conditions, be as vigorous as was that of Yarmouth, favoured as she was by the port which had been presented to her, ready made, by the rivers which there emptied themselves into the sea.

The rivalry was keen, becoming more so as the mouth of the Yare—the river laying down its sands as it proceeded—came ever nearer, by the coast line, towards and within a mile of Lowestoft, making the entry into the port of Yarmouth more difficult, and at the same time influencing many of the boats to discharge rather than to hazard the difficulties of the river passage, a loss of the results of bargaining and barter that could not be otherwise than vexatious to the bailiffs and merchants of Yarmouth, who thus witnessed the sources of their wealth rent from them, and the consequent growth in importance and riches of their despised neighbour.

The Third King Edward's Charter.

It was not, therefore, to be wondered at that King Edward III. was petitioned to protect the town of Yarmouth against the competition, and in 1371 a commission of enquiry was issued, and two years later a charter was granted, preventing the buying and selling of herrings on sea or land within seven lucæ of the town of Yarmouth.

This was a re-affirmation of the section of the Statute of Herrings of 1357, which enacted that the fishes, after having supplied the London "Pykers," a special exception this in favour of the metropolis, "none shall sell herrings in any place about the haven of Great Yarmouth by seven leagues," there being a variance, however, in which the word league became lucæ.

Against the Act of 1357 Lowestoft had protested with such good effect as to receive in 1359 an enactment stating that "it shall be lawful for the merchants of Lowestoft to buy herrings of the fishers as free as the London Pycards."

Continued Rivalry.

But the rivalry did not exhaust itself in suing for charter favours at the hand of King or Parliament, although the see-saw was continued through several centuries, to the embittering of relationships and the bettering only of the lawyers and those who fought out for the rival contestants the rightful interpretation of the word "lucæ," contended to be "about two miles" by Yarmouth, and only *one* mile by Lowestoft. The question was settled ultimately by a compromise, which allowed a post to be erected at Corton, a village on the coast-line about one mile and a half from the latter town, and which Corton Post, the post of peace, determined the boundary between the townships, within which each was master in his own house, to buy from whom he would, and sell to whomsoever it pleased him.

The rivalry had oft resulted in pitched battles, on sea mostly, between the fishermen and the bailiffs, probably developing through the years the pertinacious spirit and the pugnacity which has characterised the fishermen of this eastern coast, and helped to make them the valued manners of the ships who, whether against the Spaniards, the Dutch, or the more modern coast marauders, have become the indomitable fighters they have proved themselves to be.

The one Long Fight for Commercial Freedom.

Lowestoft fought for commercial life against privilege and chartered protection, and can claim the merit of not knowing when she was beaten, returning to the conflict before the King, the Parliament, and the Courts, as often as the case was decided against her, which it was on several occasions, and triumphing ultimately, as befits a people and its prowess, whose principles consist, and persist, in rightly struggling to be free.

The Mediæval Decay of the Fisheries.

There are more than indications, however, that when the composition was ultimately arrived at in 1400 the process of obtaining it had been so prolonged as to so financially weaken the fishermen that they were no longer able to prosecute the fishings with their former success. In 1525 Lowestoft possessed fourteen barks or doggers, the boats which used to go to Iceland to engage in the fishery for cod or ling, which fleet, however, was, in 1556, reduced to one!

The usual excuse for this decay is the establishment and spread of Protestantism, and the neglect of the rules of fasting, consequent upon the coming of the era of the Reformation, but students of our first volume will remember that it was during this period that the Hollanders made their greatest progress in the art of catching and curing, and it must be allowed that if Lowestoft and Yarmouth could fit out boats for the Iceland journey, they could also have engaged with success in the Continental distribution of their wares, which was the means whereby the Dutch turned their captured silvery hosts of the sea into the coveted shining gold of the land.

Piracy?

It is recorded that piracy succeeded to fishing as probably the more profitable branch of the sea-faring life, and the warriors who were to defeat the Armada were most of them crews of these pirate ships, who for once were to render valued service to their country, and to their descendants.

Froude, in his history, quotes the loss of a Flemish trader on her way to Cadiz, and traces her bales and tubs of valuable goods as they were swept, after nightfall, from the decks of the craft of the erstwhile fishermen into the cellars of some quiet manor house of Lowestoft. Of a certainty this eastern coast-line had a reputation far from envious in those dark days which followed or occasioned their temporary commercial extinction.

But this—

> "First of all old England's busy towns,
> To whisper its orisons, and greet the rising morn,"

was gradually to retrace her steps, and one is pleased to believe this to have been effected in part by the aid of the few fishermen who had remained true to their calling, despite the call of the glamour—and the profit—of a marauding life.

The fish-houses on the Denes beneath the cliff, and the gradually growing cluster of huts and houses beside them, emphasised the development of the industry, contributing, as it did, not a little to the wealth and importance of the town, which was growing up along the cliffs northward and southward of the fishing centre.

The pioneers of the prosperity were the men at the foot of the cliffs; the great development, undoubtedly, was in the financial assistance which was forthcoming from the top of the cliff when the pioneers below had proved that there was "money in the business."

The Transition from Sailers to Steam Drifters.

The sailing "lugger" owners, or part-owners, might prove the possibilities of the fishing, but were not always able to find the money necessary to instal the motive power which made the drifter indifferent as to the state of wind, or tide, or weather, but from whatever quarter the capital came the experiment proved highly successful — so much so that attention was turned to the building of steam drifters whose motive power should be a component part of the vessel itself, and not a make-shift auxiliary and installation which probably represented an engine and boiler dismissed from unprofitable occupation elsewhere.

In 1897 Lowestoft launched the first steam drifter in East

Anglian waters; the *Consolation* became the pioneer of the fleet which now operates from the sister ports. Vast, would seem to be the appropriate term to use of a fleet which, operating from North Sea ports in 1902, numbered 176, increased to 349 in 1897, to 553 in 1911, and to 624 in 1913, more than half of which displayed the L.T., the distinguishing sailing mark of the Lowestoft fishing registry.

Rapid as the process of supplanting was, it is a matter of congratulation that the old sailing luggers had not to be thrust aside as useless lumber with the serious loss of capital which would have followed, as in the case of the great conversion from the sailing to the steam-trawler, but the vessels, being readily and economically adaptable to the needs of fishing elsewhere, found purchasers especially amongst the fishermen of Norway and Sweden, and, being always an inexpensive method of fishing, still found favour amongst the elder and least active of the fishermen at home; but for all practical purposes the sailing "lugger" drifter has now ceased from the business as the larger vessels, year by year, with their greater profits, invite the aid of outside capital to furnish and fit them for the sea.

The Export Trade of Lowestoft.

It is obvious that this extension of the fleet, with the added increase of catchings per boat, could not be dealt with satisfactorily apart from an ever-growing export trade, of which one part, approximately a half, so far as Lowestoft is concerned, consists in "Klondyking," as it is called.

New boxes to hold a half-cran are laid side by side upon the quay, and the fishermen discharge the herring into them, to which is added broken ice and a sprinkling of salt, to be dispatched the same day, by steamers in waiting, for the Hamburg market.

As evidence of the vastness of this trade, and what it means to the port and town, the writer has calculated one pile of new boxes lying alongside of the docks, plated with name of the shipper, ready for use, to contain 64,000, representing an outlay-value of £5,000, and as an evidence of, and a sidelight upon, the commercial havoc wrought by war, not a single box could be, or was, used in the year, to the detriment of all concerned; and that huge heap of cases was but one of many such.

The other half of the export trade of the town consists in pickled herrings in barrels, of which, again, Germany is the largest buyer, redistributing them through her Baltic ports, to the farthermost centres of European civilised life, from St Petersburg to Siberia.

In these two forms of export trade two-thirds of the yearly catch are distributed, the remaining third being for home consumption in various forms, and for dispatch in the form of reds to Italy and Greece; Genoa, Leghorn, Malta, and the Piræus take them in great bulk for re-distribution through the Levant and the Grecian Archipelago.

Lowestoft has grown, because it would grow; lacking the natural advantage of Yarmouth, and having only the shallow, sandy shore as a landing-place, it was left for enterprise to complete what Nature had begun; the fish was there, had been from all time, but development was impossible until harbourage and anchorage were provided, and this was accomplished, as in the case of yet other fishing ports, by the Railway Company, who, whatever their after failings and shortcomings might be, made the business possible, to whom all honour is due.

The Lowestoft Railway Harbour Company had the first handling of the matter, and Lowestoft was placed in connection with London, but the great improvements in accommodation and service are the work of the Great Eastern Railway Company, from whose published plans and maps the following figures are taken, giving some information of the extent of the accommodation for the business.

APPROACH CHANNEL

Depth of water H.W.O.S.T. . . .	16 to 17 ft.
„ „ ordinary neap tides . .	14 „ 15 ft.
Width of entrance	150 ft.

DOCKING

Wet Docks—

Area of water for—	
General trade	41 acres
Fish trade	26 „
Length of quays—	
G.E.R. purposes . . .	1,120 ft.
General trade . . .	4,290 ft.
Fish trade	4,140 ft.
Width of entrance at swing bridge .	60 ft.
Depth alongside quays L.W.O.S.T.	11 ft.
„ „ „ H.W.O.S.T.	16 ft.

Dry Docks—

Width of entrance . .	47 ft.
Length of Blocks . . .	240 ft.
Depth of water on sill H.W.O.S.T.	13 ft.

Patent Slip—

Length of cradle . . .	84 ft.
Depth of water H.W.O.S.T.	13 ft. 6 ins.
Aft	14 ft.

Thus the fish trade now holds one-half of the length of quays, and to see the congestion on an ordinary busy morning is to be certain that ere long its bounds must overflow, or the business dribble elsewhere, unless the projected extensions are speedily forthcoming.

Twin-port with Yarmouth, the two are geographically situated, so as to be convenient to the herring fishing, and it would be a thousand pities should any shortsighted policy drive from our shores to over-seas the freights whose landing in home-waters mean work and wealth for the respective towns.

Any account of Lowestoft would be incomplete which omitted a reference to her trawl-fish trade, especially as at the present time it is largely carried on by what is fast becoming an obsolete method of fishing, viz., the sailing-trawlers, of which an average number of three hundred are at work the whole year round.

In addition to a large fleet of home-owned boats the port is a favourite resort of Brixham men during the winter season; the easier depths of the North Sea hereabouts, and the moderate character of the south-west winter winds, as contrasted with their violence in the English Channel, make the East Coast, and Lowestoft in particular, a fishing centre which fits the lesser strength and power of the sailing craft, and affords a sure subsistence for the men during the most hazardous season of the year.

For the fishmonger in active business it is perhaps an item of knowledge that there are possibilities of supply from Lowestoft which he has not hitherto realised, or availed himself of, and this, particularly, in those months which follow the cessation of the great herring fishery in December, the greater part of the bulk of trawl fish being caught by boats that are often only away from shore for two days, and rarely extend their journeys to a full week's absence.

This fact is of prime importance, for it means that the fishmonger has the opportunity of keeping his fish without waste instead of its being already "mortgaged to the dead," as it were, by the steamer working—and waiting—afar off until the skipper can return with his fish-holds full from the *ultima Thule* of the modern fishing journey.

The principal fish, and the quantity of each kind, landed in Lowestoft during 1912 and 1913 are given in parallel columns below.

	1912 Cwts.	1913 Cwts.
Brill	4,062	4,967
Soles	12,563	12,891
Turbot	5,024	4,456
Cod-fish	13,750	12,266
Conger Eel	677	674
Dabs	9,826	9,073
Dorey	8	29
Dog-fish	439	990
Flounders	564	193
Gurnards	379	3,837
Haddock	109	31
Herrings	1,699,214	2,151,463
Lemon Soles	5,720	4,496

	1912 Cwts.	1913 Cwts.
Ling . .	73	26
Plaice . .	121,799	112,987
Skates and Rays .	17,559	14,404
Whiting . .	35,034	32,618
Mackerel . .	51,977	61,242
Crabs . .	1,518	1,100
Lobsters . .	1,582	2,028

Reduced to boxes, or trunks, of fish other than herring, the records for 1913 give 25,473 boxes of prime, sole, turbot, brill, and 204,230 of offal, or common fish, an average of about 770 trunks for each of the working days of the year.

The herring catch for each year is also inserted to show by comparison the all-dominating extent of the drift-net fishing, but this greatness should not blind us to the facts of the amount of trawl-caught fish which makes the port a useful one for the fishmonger to be in contact with, especially if his trade is sufficiently large to place an order with his agent, or wholesale man, for original packages of fish such as are stacked up by the fishermen in the market-place in readiness for the auctioneer and the buyers.

Lowestoft has, and will long have, a distinct place in the fishing trade of the East Coast, and as its full value is realised by railway company and public alike, its progress will be more rapid, its usefulness more apparent, and its future the more secure.

CHAPTER III

THE CLEANING OF FISH

One of the important duties that a fishmonger has to perform is that of cleaning his fish. The errand boy, or apprentice lad, developing any affinity for the business, very soon learns to take the knife in hand and to experiment with the removing of the gill and gut from the small plaice, dabs, or some such fish, that clumsiness in handling the tool cannot spoil to any great extent.

For such learners in the early stages, it may not be wise or well to use the knife with too keen an edge upon it, although nothing conduces to more slovenly work than a knife whose cutting edge conforms to the description of a wedge.

The Cutting Edges of Tools.

In our technical schools before a lad is placed at the bench and taught to plane, or to use the chisel, he is taken through a course of lessons upon the cutting edges and the various angles at which the tools should be ground to be effective for the varied character of the different materials they will be used upon. The lad will learn, or be told, of the directions of force and how best it should be applied to effect a given purpose, with the result that whether riving the stub-end of a tree trunk with wedges, shearing a sliver of steel or brass from the metal in the lathe, or delicately undercutting a piece of carved woodwork the cutting edge may be suited to the purpose, and the thickness of the tool chosen for the especial work in hand.

"The tools to him who can use them" is an apt and telling phrase, but "The tools to him who can sharpen them" is more *apropos* and precise, denoting the workman of ability, amongst whom none is greater than the blacksmith, who must forge and make his own.

The Value of Technical Training.

To the lack of preliminary teaching on this point is to be attributed the fact that a fishmonger passes through the various grades into that one where his duty is to cut up cod-fish, and is found with an unfit cutting knife, which is driven with a spoke or mallet through the bone of the fish, regardless of the fact that the necessarily violent blow is crushing the fibres of the underneath part, so that if a slice or cutlet is wanted at the next cutting, it will be impossible to obtain it, so bruised and broken are the flakes of the fish. Particularly is this the case with the cutting of hake, more especially in winter and spring, when the market has to rely upon the Moroccan fish, whose flesh is on the soft side, but whose bone, apart from the joints, is willowy and tough.

A Study of Knives,

Careful training and the understanding of the values of cutting edges would teach the foreman — master, also, very often—that a well-tempered, thin, long-bladed ham- or cooked-beef knife would cut its way through with only the knack and power of the wrist behind it, and few indeed are the salmon which such a knife will not sever the bone of at any point required.

As a general rule it may be taken that the position of the knife when it comes to the central bone should not be horizontal, but held nearer to the angle of a hand-saw at work, the cutting value of the action of hand and arm being greatest there.

A close observer of the cut face of a salmon after a wedge-shaped knife has been driven through it will detect the dragged appearance with the dull saw-dusty like deposit which the tool, tearing through the flesh, has left upon it, as against the clean, bright, clear-cut result of the workmanlike man and knife.

And of Grinding.

Sharpening a knife does not consist in being able to use a steel with butcher-like flourish and effect, rather in thinning the knife down from the back to the front, it not being possible, or desirable, to purchase them like modern razors, hollow-ground. For this purpose a stone is necessary, upon which from time to time the knife is held in flat position, so that the metal is ground off in one straight line from back to front, a section of the knife showing a true triangular form.

Flat grinding is laborious, few shops being able to keep a grind-stone or an emery wheel, and, where they do, the tendency is to wear the knife away in irregular waves or gaps; because, perhaps, the flat work is laborious, one sees continuously the quick-time edge raised by violently rubbing less than a quarter of an inch of the steel upon the edge of the cleaning block, or a doorstep, answering fairly well for the moment, but wearing away the width of the knife in less than no time, and leaving it, ere half worn out, a useless wreck in the rack.

Contrast this careless method with that of the cabinetmaker whose oiled saw and chisels are lovingly sharpened, carefully tended, and placed away as the best of friends and the most valued helpers the man possesses. The true workman is the truest friend to his tools, without whose efficient aid his work is poor indeed, in which connection we may be allowed to quote:—

> "Who goes a borrowing
> Goeth a sorrowing;
> Few lend (but fools)
> Their working tools."

from good old Thomas Tusser's "September's Abstract."

Presumably the sorrowing was to be incurred through using the lender's well-edged tools!

Knives and Fingers.

The learner will early realise that where fingers and knife are working closely together, the left hand must learn what the right hand is doing. Keen blades seldom ask questions, By your leave? or, If you please? It is a cut, and blood, at one stroke. In passing, the writer would record that through a long series of years of work he has never suffered with a poisoned hand from cut with a knife or pricking with a bone; the first he believes to be because when the cut has come it has been left to bleed itself dry and clean, and, unless, of course, the gash was a deep one, he would pass the advice on—advice which would seem to be justified by the records of the war, where trouble to wounds was reported to be found to follow the binding up at too early a stage.

Cleaning—to Clean.

The actual cleaning of the fish calls for comment, first, that the whole art of cleaning is to clean; the reader will forgive the reminders that cleaner than clean cannot be, and that anything less than clean is unclean. Without exception, cleaning implies the removing of the gill of the fish, and with the exception, perhaps, of the mullet—although the exception is now little observed — the removal of gut, entrail, and blood, from the herring upwards to the salmon. The sprat, for some unknown reason except custom, is sent home merely washed, and the remainder of such cleaning as falls to its share, gill and such like, is done after the cooking, when the trimmings remain to adorn the side of the eater's plate—an unpleasant array, it must be confessed, especially if the cooking has been of the warming through order only.

Ordinarily speaking, a plentiful supply of water is required wherewith to assist the blockman in his task, but the writer is of opinion that the water is trusted to do too much—is, in fact, regarded as being able to remedy the slovenliness of the cleaner's handling of the knife.

The Use and Abuse of Water.

Water has the further influence or effect upon the fish of soddening it, and to that extent destroying the flavour, which is a part of its value. He has just returned from a three hours' casting of the herring nets off shore, bringing with him some of the finest specimens of the fish one would wish to see, and already they are sizzling for supper. It would have been sacrilege when cleaning to throw them into water and to leave them there whilst a quantity were gutted and prepared; and if this be so when jumping alive, how much more so when the fish, any fish, is already limp after having been caught for two or three days?

Whilst on the question of water for cleaning, it is an admirable method to throw salt into the cleaning water, or, if preferred, hang a canvas bag filled with rough salt upon the tap through which the supply for the cleaning block comes. This will save waste and ensure the full value of the salt being used up economically.

The fish-cleaner should study to use his knife so that all blood and garm may be removed to the fullest extent without the aid of the water at all; this will be an education in the handling of the knife from the wrist that few other things will give him. It may well be that the hard, harsh movement of the hand of the modern fish-cleaner results from the practice of simply ripping the fish up, tearing away whatever will come readily with the knife, and leaving the water and the brush to effect the removal of the remainder.

For the acquiring of skill the grasp of the knife should be firm, and the suppleness of wrist allow of play and movement as light as that of the rapier-touch of the fencer; but unless the knife is given to do all that it should do, this skill will hardly ever be obtained, and the blockman will be but a poor workman at best.

The Cleaner as Carer for the Fish.

Some would be inclined to affirm that only the prime fish should receive this careful treatment, but the commonest kinds have flavours that are even more subtle and more easily dispelled by careless handling and treatment, and amongst such the herring, the whiting, and the haddock rank. As for soles, whatever blood cannot be extracted with the knife should be wiped away with a cloth kept clean as possible for the work; but there is little that an expert knife-hand cannot remove. He knows that not only the point of the knife is at his service, but also the cutting edge, by means of which the waste material is *squeegeed*, as it were, both from the upper and under flap; this being done, of course, with the rounded or scimitar-shaped top-end of the knife.

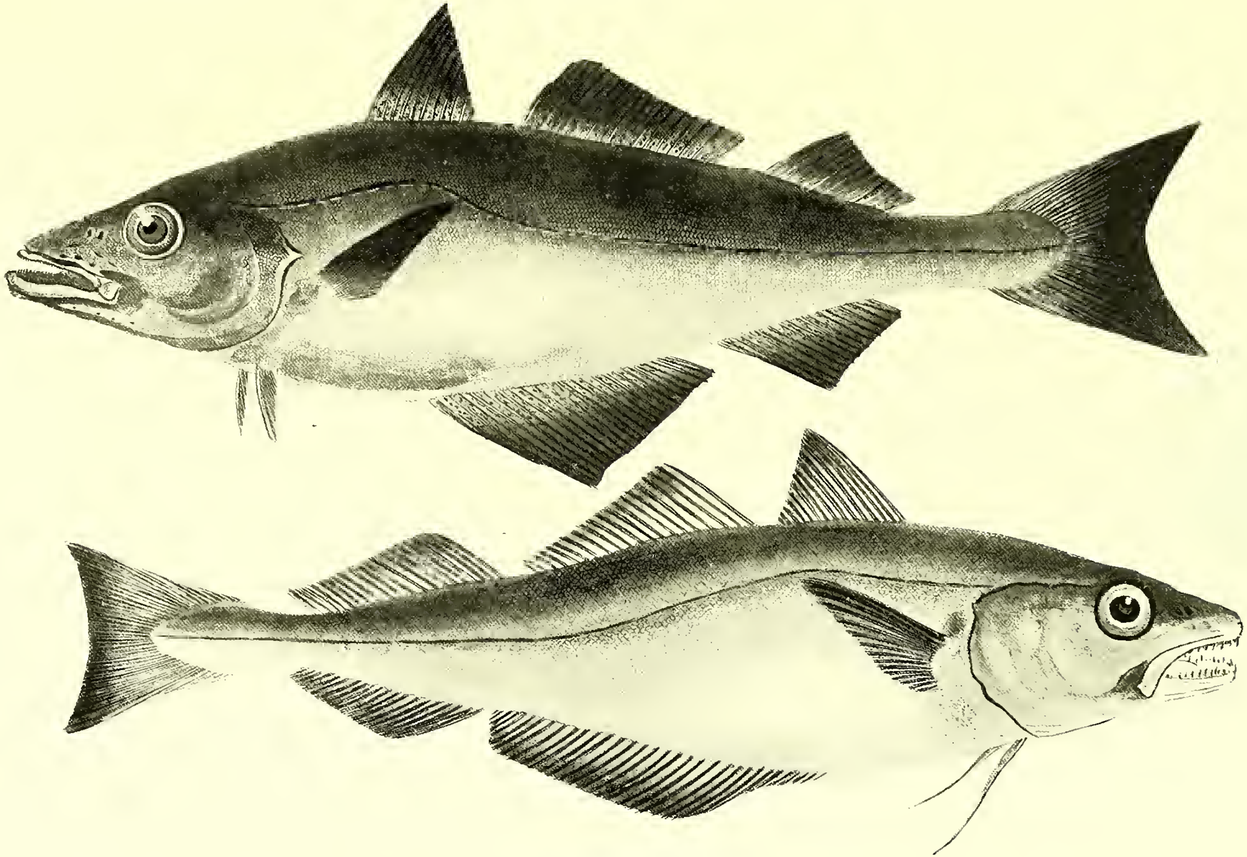
As to the actual cleaning of the fish certain districts have different methods, although in practice these vary little, the great variation being between those shops and businesses which will not tolerate a piece of fish being iced away into stock without thorough cleaning, and those others, more often in the north of England, where cleaning is never thought of until the fish is sold.

One reason for this lax method is given as being the wasting of weight, and therefore profit, which ensues, but the greater waste will surely be in the damage accruing to the fish by the neglect.

The blockman who desires to progress will always err upon the side of too much cleaning; it is the unprofitable servant who is careless of what happens if only the shutters can be put up at the exact moment of closing, and who will sweep everything into the ice-boxes regardless as to whether it is cleaned or uncleaned.

Mackerel.

First day herring and smelts might be left thus to take care of themselves, providing they are carefully iced away, but with these exceptions the blockman is safe in cleaning



WHITING POLLACK.
WHITING

everything, even mackerel—a fish which is too often regarded as being unnecessary to trouble about, but which contain, on the average, more food in the gut, and that of a soft and sluttery nature, than any fish of its size that comes into the shop. It cannot be well that this should remain in the fish, especially during the summer months, when it and the fish are most plentiful. Better by far that the gill should be drawn out, and with it the trail of gut as far as it will come through the opening at the gill. The point of the knife inserted at the vent will draw the remainder of the gut through it, and if then the belly of the fish be ripped downwards for an inch or so, the blood can be removed more certainly and easily. A fresh mackerel treated thus, wrapped up and laid away under ice, will be good in a week's time, where, with careless handling, less than two days would have sufficed to render it useless, if not unwholesome.

Whiting—Haddock.

Some shops make a custom of not cutting the throat strap of one flap of their live whiting and fresh haddock in the same way in which a turbot or a brill is left, and when these long fish are sent out plain it must be said that the appearance is neater and less ragged. It is also an assistance to the cook if she wishes to stuff the fish for baking, but the leaving of it should not take away the attention of the cleaner from the inside of the head, where slime collects, and soon becomes offensive, a trouble that is shared in common by all the cod-fish family. With the exception of the cod-fish many of them have their heads taken off as soon as they come into the shop, or at the coast, where, with the ever-growing demand for fish-meal, the offal and bones are of considerable value to the merchant.

The Herring.

For the cleaning of herring it is becoming customary to cut a gash in the top end of the flaps, leaving a V-shaped opening between the gill-covers or head of the fish and the body; the plan is conducive to the better cleaning away of blood, but the writer, perhaps for old time's sake, prefers the older method, when the gill was removed and the trail or gut drawn out by an oyster knife, in the same manner as it is usual to clean a smelt. If the cleaning of the herring is properly done as a result of this cutting with the knife, there is little to be said against it except on the score of neatness, but with a modicum of care the older plan was just as effective for the purpose, and the appearance of the drawn-cleaned fish was decidedly in its favour, whilst the blood is just as liable to be left in in the one case as the other.

Turbot—Brill.

In cleaning the turbot and brill there will be noticed within the head and on each side of the central line of the backbone, and close to the spot where the gills meet it, that there is a kernel projecting; these should be removed with the point of the knife, as from there it would appear that the deterioration of the fish begins as a centre, more markedly so in the old days, when the Dover Prime was a necessity in a first-class business. The fish that came from off The Varne was the richest, finest fish which came to market, alas, now but very seldom met with, although the name of "Dover" survives, but usually in a cut-away shop, where skinned witches are dubbed as Dover soles and sold at 10d. a lb.!

Removal of Blood and Offal.

Wherever blood or offal lurks it is the business of the blockman to hunt it out like a sleuth-hound, using cutting knife, oyster knife, brush and water, each or all, as the case may be, so only that the garbage is removed and the fish sent to table clean and wholesome-looking.

One may go into a first-class restaurant and be served with a "skinner" haddock for a curled whiting, and find a clot of blood in the hollow at each side of the throat bone, and probably another below the vent. The customer knows why they are there, the knife "roughed" the fish out, the brush or bristles was run along the bone, and thereafter the work was deemed complete, for had not knife, brush, and water all been used?

At the other end of the scale the careless fish-frier's man will use the knife to his small fish, plaice, whiting, etc., throw them into water to soak a while, then into his "wire" to drain, and thereafter into the pan, leaving the little traces of blood, some of which will remain to discolour the bone of the cooked fish, whilst the remainder goes to discolour the oil, and to deposit a sediment in his pan which burns and adds something to the unpleasantnesses of the business.

Cleaning before Cutting.

The blockman will not be slow to gather that the fish which is cut as, or ere, it is sold, is best cleaned beforehand, cod and ling particularly—the blood in the hake is a negligible quantity altogether; these other long fish are always more difficult to clean in sections, in addition to which the blood runs down the clean-cut face, and discolours it, often beyond possibility of removal, for the cutting takes place usually when the time cannot be spared to clean the remaining piece, the result of which compulsory neglect is a bruised-looking piece that has lost its face value.

The Blockman's Morning Duty.

When the fish comes home from market or is taken from the coast-sender's box, its destination is usually the front or the marble slab, it should be rather the fish-cleaning block where the cutting fish may be cleaned, and if time does not suffice for a thorough overhauling, at least time should be made for a rougher treatment which takes away all the superfluous blood that may run to the detriment of the fish and the curtailment of the master's profit.

With the knowledge that all blood is "taboo" the blockman will soon learn how to make those deft strokes with the knife which will facilitate its removal, and at the same time will not prevent the after using-up and dressing of the fish.

He will study the bone anatomy and structure of each, that he may be able the more readily and efficiently to deal with it as each description passes through his hands, whether it be handling the piece below the vent of the salmon without breaking the fish, or cleaning the simple herring. How will the fish look when it is opened out upon the plate after cooking? That is the idea to keep in front of the mind's eye, and he who works up to it will have little in his work that the most fastidious or exacting of masters can complain of.

CHAPTER IV

THE FILLETING OF FISH

The age which demands its business telegrams by wireless, even in mid-ocean, cannot possibly spare the time necessary to sit at meat and pick its fish from the troublesome bones; it must have fillets, with the result that the small plaice that are sold by the fishmonger have to be filleted for almost every customer.

The routine of the cookery classes is usually circumscribed also, so as to exclude *whole* frying, and, undoubtedly, much trouble is saved thereby to all — sometimes, it is to be feared, at the expense of both the quality and the quantity of fish. Be that as it may, the fishmonger exists to supply the demand, and does not think it his province to dictate what that demand shall be.

The Anatomy of Flat Fish.

The plaice is the fish which, more than all others, is thus dealt with. It may be that the ease with which it adapts itself to this need is the cause of its popularity, which, again, is the cause of the anxiety of the various nations who are participants in the International North Sea Fishery investigations as to the progress which is being made into the life history, and conditions generally, of the plaice—the fish to which nearly all their attention has been turned through several years.

The flat fishes, plaice, turbot, brill, soles, and other kindred kinds, have this in common, that the backbone is ridged in its centre both above and below, this ridge coming approximately to the centre of each flat side of the fish, and following a line extending from the throat to the centre of the tail.

The Use of the Lateral Line.

Above this line is the lateral line, which in all fish denotes the division between the two main formations of flesh, of which each side of the fish is composed.

Above this lateral line, but beneath the skin, will be found a layer of flesh, whose duty it would seem to be to bind over and connect the juncture - line of the flesh of the fish, and this in its turn, as in the case with the sole tribe, is again protected and bound by the silver-skin, so termed, and which, being left intact upon the sole after the skinning, gives to it a look of goodness and value which otherwise is lacking.

This dividing line would seem to have been arranged by Nature for the especial purpose of facilitating the filleting of the fish, and the knowledge of its existence is the first step towards filleting aright.

The Necessity of Cleaning.

First clean your fish, or draw the gut clear away; the expert filleter may deem this unnecessary, but even he may of chance burst the gall, or by one clumsy stroke of the knife spread blood and discoloration over his fillets, and, prevention being better than cure, we say again, first clean your fish.

To Fillet a Plaice.

Secondly, cut the head away. As with all simple things, there are several ways of doing this as well as the right way which is to let the knife follow closely round the bony structure of the head. This, in the plaice, leaves a triangular piece of fish to form the ends of the two largest fillets, and also the shoulder bones at the top of the flap. The reasons for this are that waste is avoided, and at the same time, the customer has paid for the fish as it was weighed, and has a right to all the flesh which can be taken from the bones; further, that point-shaped piece of flesh may have but small superficial area, but it makes the fillet look larger, and thus does not raise a suspicion as to whether the fillets came from the fish that was bought, or were taken from some other in error. With many, the unthinking plan is to sever the head with one straight cross cut of the knife, approximating to the position of the shoulder—to the wasting of good fish. Others leave the head on the bone altogether, but the best work is rarely possible thus, especially when the second half of the fish comes to be filleted.

White Side First and Uppermost.

The flat fishes have also a best or thick side; in the plaice this is the black or top side, and the filleter should turn his fish white side uppermost, placing the tail towards him, and begin on this.

The first cut should be a straight and downward movement of the knife, along the lateral line, which is plainly marked on the fish until the bone below is reached. The second and succeeding cuts should be with the cutting edge of the knife turned towards the left, endeavouring to bring the flat side of the knife into the same plane as the bones, and cutting steadily outwards until the limit of the flesh is reached at the junction with the fins. This being done, turn the fish end for end, and take off, in similar fashion, the shortest of the two fillets; this one has the flap attached, upon which has rested the gut, and is, therefore, liable to stain from blood or gall. Should there be appearance of such it must come away, but rarely, now that the fish is mostly sea-gutted, is it sufficiently darkened to merit savagely cutting off. A bevel movement of the knife will often preserve all, if not a greater part, of the flap—an act of good fishmongering, having, as its reward, the better pleasing of the customer. Often, indeed, the flap may be left intact, with, perhaps, the exception of the shoulder bone itself.

Now turn the fish over, operating lastly on the thick side, and follow the same routine exactly.

When the filleting is finished there should remain on the bones only the small modicum of flesh that clings to, and between, each bone, leaving nothing for waste — or tears; for occasionally the appearance of a plaice bone is such that the master might weep if the customer did not, the flesh is left in swathes because the knife did not get down to its work with the curved end, and the skin at the fin-edges of the fish remains in position in irregular curves. Plaice is now too dear to allow of such mangling, either by oneself or at the hands of others.

Skinning the Plaice.

A common order now is for the black skin to be taken off. It is possible to do this by cutting through the skin on the thick side below the head, and with the point of the knife dividing between skin and flesh towards the side fin. The thumb is then used to carry the flaying a little lower down, and afterwards the first finger, when, having loosened one side, the skin may be pulled across the lateral line, and when below the flap is reached, the thumb and finger may be again brought into play; but only an expert should attempt it if the fish has to be filleted.

The alternative is to fillet first, and in practice this is always done, and then, turning the fillet over, skin downwards, cut between the flesh and the skin with the knife, and, holding the skin down with the left hand, shave the flesh away from it. The art or knack required is to keep the edge of the knife downwards, so as to cut all the flesh away, but not to cut the skin through, and it needs a little practice to become proficient.

The Sole.

The sole is invariably skinned first, in which case the scraping off of the scales is dispensed with.

A few words as to the skinning of the sole are advisable.

If for filleting, take off the white skin first by cutting the tail through and then ruffling up the skin, where the cut was made, with the edge of the knife; at the tail the skin of a sole clings less lightly than anywhere else. Holding this ruffled-up tail skin with thumb and finger of one hand, use either thumb or finger of the other hand to run along the fins between the flesh and the skin, and then, having thus bared a portion of the flesh, you can gradually pull the skin off, being careful that the silver skin, which has a great affinity for its fellow skin, does not come away with it. Afterwards the black skin should be removed in the same fashion, leaving the white silver skin again in position, for, should it tear away, it seldom comes alone, but drags a ragged piece of flesh with it, spoiling the appearance of the fish or the fillet.

The Filleting Board.

For all filleting it is well to use a special board to fillet on, which can be scrubbed and hung away when not in use; the usual cleaning-block is rarely level enough, and no amount of skill will enable good work to be done upon a block which is worn into uneven holes or depressions.

The thin, or white, underside of the sole is again the first side to be operated upon, and, except that a little more care should be given, the filleting proceeds exactly as with the plaice—perhaps it is slightly the easier of the two, conforming, as the sole does, more to the natural sweep of the knife.

After the fillet is detached it may be found that a section of the fin-bones adhere to the edge of it; these should be removed by a cutting with the knife, which leaves the outside contour of the flesh exactly as it was when upon the fish. Nature's curve, in this respect, cannot be improved upon, and if it could, it would be at the loss of the weight of a fish which is far too dear to experiment with, or to allow an untrained knife-hand to practise upon. The same idea holds good also as with the plaice. Make your fillets to appear as large and as thick as is possible, going to the very extreme of the thin substance above the tail, and outwards to the junction where the outer-fin bones meet their complementary small bones in the body of the sole. The customers pay—let them have all that they pay for.

The head of the sole should be removed before commencing to fillet; also, the filleting board must be thoroughly clean, or anything coming into contact with the silver skin will stick there, and defy all attempts at washing off, sawdust and grit being especially dangerous and troublesome.

The Turbot.

The skin of this fish cannot be taken off before filleting; he clings to it even more closely than does the eel, who only parts with his skin under compulsion, flaying being a game that can be played only once in a lifetime.

Cut away the head of the turbot and begin on the white side of the fish, and if the order is for the black skin to be taken off, fillet it, and then place upon the board, skin downwards, tail end towards you, and let the knife shave it away in the same manner as is done with the plaice. Here and there the edge will come into contact with the back-end of the spines or spikes—the armour of the turbot—when the knife will want easing, or playing, so as to prevent cutting the skin, for it is these armour-spikes, of which the eater is fearful, which is the cause of the need to remove the black skin at all. It would seem to be the order of the day that no skin is to be served up with the fish, let alone eaten, although many would tell us that it is the most nutritious part of the fish, and the writer believes it. At the same time he will enter a protest against the wastefulness which cuts away the flap, white or black side, because it is flap, without any valid reason for so doing. It should be demonstrable that this is a more valuable food-part of the fish than any other, but whatever happens it should not be allowed to get into the rubbish tin.

Cod-fish.

Cod-fish is rarely filleted, except the small fish, codling, and the tail occasionally, the full-sized cod being looked upon more as a boiling and baking than a frying fish. The smaller fish, codling, would be filleted the same as a haddock, but one part of the large fish should be "filleted out" and that is the bone in the poll-piece next the head.

Filleting out the Flap-Bones.

The rough and ready method is to cut the head off by a straight blow below the shoulder or top of the flap bone, and straight through, leaving bone and flap upon the head, which usually, complete, nowadays sells for 2d. — the days when a crimped cod's head and shoulders was an expensive dish are past. This slashing is wasteful; let the head be cut away at the junction below the gill-covers and the skull, and the bones of the flap filleted out from below the skin—perhaps ferreted out would be the better descriptive word—but keeping the skin intact. When the poll-piece is sold it must be tied up, and in the tying, with a little care, all this top end of the flap can be tucked in and made to look orderly and decent with a very little, if any, trimming up with the knife. This saving in weight is often a pound, a useful additional profit on the fish, even if the head has to be sold for a penny less than it would otherwise realise.

One Economy worth thinking about.

This is one of the economies a master learns and is found practising when he is running his own business, and one of the things which constitutes the difference between master and manager when either delights in the smashing blow with a heavy knife, which is effective, considered theatrically, but destructive as far as the week's profits are concerned, and the pity of it is that both masters and managers will too often prefer the spectacular to the profitable, the ostentatious to the solid and the satisfactory.

Whiting.

The filleting of this fish may be taken as typical of the long fishes, itself the smallest of them, that are thus dealt with in the daily routine.

Two methods present themselves, and the two are both followed by experts. The head is first taken off—cutting is usual, although pulling seems to leave a little flesh on the fillet which otherwise would not be there.

The fish is laid along the cutting block with its back facing the blockman, its tail towards the right; the knife is then cut into the flesh, just above the backbone and fins, and taken through as far as one cutting of the knife will go, which is where the belly-bones branch out and upwards, through also until the end is reached, but not attempting to remove the fillet. Now turn the fish end for end, still with its back towards the operator, and cut again from right to left; next, shift the position of the left hand, hold the top fillet away from the backbone, and cut from left to right, working the knife above the thick side-bones above-mentioned. If this is carefully done the fillet will now be severed, with its flap complete, from the body of the fish, when, the fish being turned over, the remaining fillet can be finished and removed in similar fashion.

As to how much of the fillet is now pared away must depend on the condition of the fish and the expertness of the filleting, this fact being borne in mind that customers pay for fish and do not wish for bones, therefore, if the bones are apparent the knife should be used to shave them away.

Another Method.

The other method is to turn the fish, head and ventral side towards you, cut the tail-end of the top fillet clear, then lift the flap, and with a right to left downward cut take the knife behind the stiff bones, or, from the head use the point of the knife, blade upwards, to work behind the bones, until the first cut made from the tail has been reached, and with one more cut, either from left to right or right to left, as suits the blockman, along the flat-lying backbone, the fillet is finished. Then turn the fish over, and proceed again in similar fashion with the second fillet.

Filleting the Haddock.

For larger fish, and for haddock, a good workman with a good knife will fillet after the fashion of splitting; the fish is laid with its tail towards the left hand, the flap is held clear with the left hand whilst a clean cut is made through the side-bones both on top and below the central backbone, and then the top fillet is removed with a second cut of the knife, clear away, and after a turning over of the fish the underneath fillet is also finished off. This method leaves the awkward side-bones in position, which will need to be removed by shaving underneath them. But the plan has its advantages; it can be executed by fewer and straighter, therefore cleaner knife-cuts, and in possibly less time, but the workman and his knife must be in good trim, or the fish will suffer through mangling and dragging of the fibres.

For all similar purposes and needs codling can be treated in the same fashion.

Finishing a Fillet.

When the fillets of either whiting, haddock, or codling are finished and the side-bones removed, the lug or shoulder bones should be cut away — a few hotels, and such-like customers, have them left on—and the knife is passed round the extremes to remove any ragged edges, leaving the fish neat-looking and trim.

As in the filleting of the plaice, it is easy to leave a fair modicum of flesh upon the main bones, especially when they branch away at nearly right angles to the backbones; to remove all this flesh without breaking the fibre of it, so that it may all be contained in the two fillets, is one part of the art of fishmongering, which art is only attainable by knowledge of the anatomy of the various fish that are being handled, and by skill in the use of the knife.

Splitting.

This differs slightly from the filleting in that one fillet, or side of the fish, has to be removed from the bone, but remains attached by the back skin, and as much of the flesh as will allow all to hang together for the purposes of cooking, mostly by grilling.

The head is taken off, or left on, according to the custom of the shop, or the customer's wishes; it is usual, also, to sever the underneath half of the fish from the bone, cutting through the side-bones to do it, which bones are left in position on the cut-away side, as they give support and strength in the cooking, and, as is seen in the dried or finnon haddock, are not particularly objectionable when they come to table.

As for a Finnan Haddie.

The plan of splitting, as followed by the curer of the smoked haddock, is a good one to follow; the first stroke of the knife should make a clean cut from the head nearly to the tail, the left hand holding the fish just a little towards an upright position on its back fins, so that the cutting may not have to be altogether horizontal, with its consequent loss in power to the cutter.

This first clean cut from head to tail should extend about two-thirds of the way only through the flesh; the left hand then holds the top side of the fish away from the knife, which takes its second cut also from head to tail, through the backbone this time, and towards the cutting block in an oblique plane; this leaves the thick part of the backbone on the left-hand half of the fish, and the thin end bones of the backbone on the right-hand side of the fish.

The novice will say, Why not take the cut straight through towards the back of the fish, leaving *all* the backbone on the left-hand side? The only reply is, do it both ways and see which satisfies the eye most; and another cogent reason is that the fish, by our method, looks larger, and is therefore the more satisfactory to the customer.

The splitting being done, the rough front edges of the side-bones still attaching to the backbone on the right-hand side of it, should be cut away; one horizontal sweep of the knife will do it. The V-shaped pocket in the bones behind the vent, and where the tail begins, should be lightly cut into with one downward movement of the knife, and the blood which usually lurks in the canal which is thus laid bare, can be easily removed by a sideway movement of the knife.

After Treatment of the Fillets and Split-Fish.

Before the splitting takes place the fins of the fish should be trimmed away neatly, and the cleaning of the fish with knife, and brush, and water should be carefully attended to, otherwise the staining of the blood on the fresh, clean face of the cut fish will spoil its appearance beyond repair.

Fillets and split-fish should never be put into water after they have been made ready; the practice of doing it makes a man careless of the preparation for his work. "It can be cleaned or washed off, afterwards," is the unspoken attitude of his mind. Thus it is that we see a dirty block to work on, and the filleting of uncleaned fish, with the result that the worker becomes habituated to the practice of sousing each fillet in water, or leaving it dangling in the tub of the cleaning block.

Cut the fillet clean away, and lay it into grease-proof paper straight away, and it will please both cook and customer; sodden it with water unnecessarily, and both cook and customer will complain.

Skinning a Whiting.

This is one of the most common tasks of the fishmonger, perhaps more so than filleting, for whitings can be bought at less money than plaice, and this it is, as in all else, that rules the consumption.

The cleaning of the fish in the first instance must be above suspicion, care being taken that the blood is removed from the V of the backbone, and that the laying bare of this blood canal is done by one movement of the point of the knife, the back of which is laid against the centre of the backbone, so that the forward movement of the knife may make one incision in the flesh and skin, and that the right one, when it is easy to remove the blood which hides there.

A careless hap-hazard cutting so weakens the fibres that when the skin is being removed the flesh pulls away with it.

The Anatomy of a Whiting.

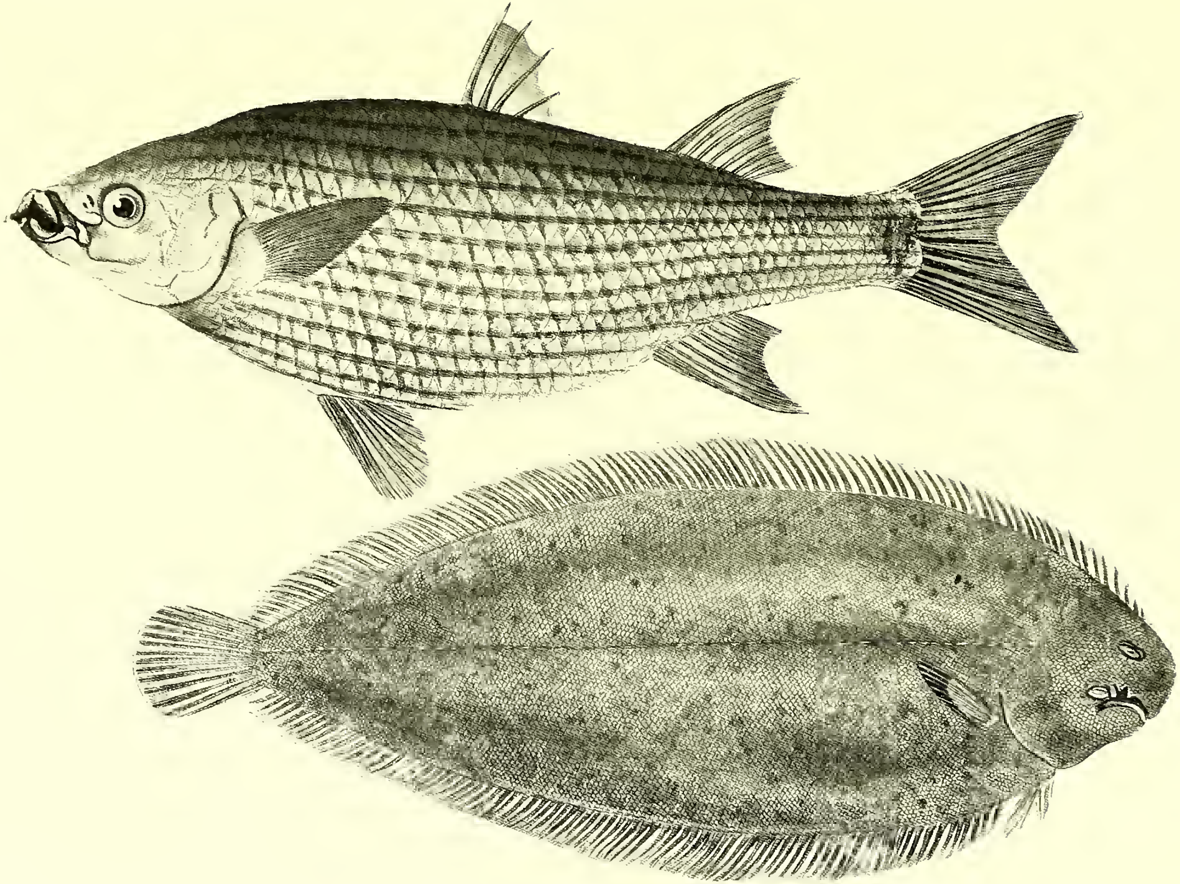
As with the majority of fish, the whiting has a main backbone, to each bone of which a smaller bone is attached, running outwards, as a continuation, to the underside of the skin, and to these smaller bones are attached the fin-rays, or fin-bones, by a sort of knuckle-joint beneath the skin, and this knuckle-joint it is the business of the fishmonger to sever in the process of preparing a whiting for frying.

Looking at the fish it will be seen that the three dorsal or back fins begin a little from the tail and stretch, with two small breaks, almost to the head.

And How it Affects the Skinning.

The whiting is first held in the left hand with its head towards the operator, who begins to cut away the lower fin with the knife-edge turned towards himself, for this purpose cutting through the skin and bones, only at the knuckle-joints; when all three fins are thus cut through at their base the point of the knife is used to sever the skin beyond the lower fin down to the tail, and the skin above the upper fin towards the point of the nose of the fish; also, should the skin between the fins not have been cut away, this, too, should be severed.

In similar fashion the under or anal fins should be cut away, and again cutting the skin towards the tail.



GREY MULLET.
COMMON SOLE.

To take the skin off it is necessary first to cut the flaps through from the vent, two-thirds of the distance, towards the shoulder bones, when a pull at the shoulder-bone and hanging flap will remove the skin entirely from one side of the fish.

To remove the skin from the head, grip the loose skin above the eye between the thumb and finger, or thumb and edge of knife, after which the eye can be pushed out from behind and easily taken away.

The cutting away of the flap should not be done by taking the knife too near to the main body of the fish, otherwise the fore-end of the fish will look unnecessarily narrow and thin.

Tail in Mouth or through the Eyes?

In the old days, in the West End of London, a whiting was always secured in the curled position by a wooden skewer passing through the upper and lower jaws which grasped the tail between them, and such was the force of the training of custom that when the tail came to be placed through the eye of the fish the new method appeared ugly and ungainly; to-day, when occasionally the skewered whiting is met with, it appears by contrast, uglier still. After the tail is passed through the eyes it should be cut, not before, else the stiff tail bones will catch against the circular bone-dome of the further eye, and the patience of the blockman will be tried in his endeavour to complete his task.

Skinning the "Skinner."

The small haddock—"skinner," popularly termed—is treated in the same way. Its fins are the same, and set in the same fashion upon its body, but more care is necessary, as the flakes of the fish are bolder, and it is rounded, having more flesh, and commensurately softer in consequence of the texture being of a different formation.

These fish are often turned into iced water with a little salt to harden before the skinning is started, and another need for care is that the fin bones are stronger, needing a sharper-edged knife to cut them through at their base.

A special point is made of cutting the fins away thus, because the ordinary method of the careless and unthinking is to hack away at the flesh on the ridge of the back, there or thereabouts, being good enough for the business, with the result that the flesh is damaged and presents a serrated, or saw-shaped, appearance, as though gnawn or gnarled, instead of being smooth and regular.

As a point of fact and of good fishmongering the flesh should not be cut at all; in fact, some old-fashioned shops still use shears, and these, although smiled at by the self-sufficient knife-man, are capable of keeping the man on the right side of the fish, where the knife allows him to stray at will.

The Skewered Skinner.

The smaller "skinner" will probably be curled by placing the tail through the eyes, but the tail of the larger ones may be difficult of passing through, and these may be secured between the jaws, the skewer passing through the flesh just about or above the point where the tail fin-rays begin.

The skewering of whiting or haddock makes the fish look larger, but, generally speaking, the skewer method leaves the curled fish more loose and sloppy, and the risk of breaking in the cooking is increased, although when the fish is curled for boiling—that is, with the skin left on—the support of the skin is sufficient to counteract the tendency to break.

The Pocketed Sole.

This is a branch of fishmongering very little practised nowadays, or even called for, and it resembles the boning of a quail, only that you cannot turn the fish inside out to get the knife at work.

The fish is skinned on both sides, and then, with its head on, turned bottom or white side upwards. The knife proceeds as in filleting, except that it has to work above the bone and under the flesh, towards the fins, until it meets the joints of the small bones, where they are attached to the main back bones; this has to be done on the left- and right-hand sides of the fish facing you; then, after turning the fish over, the same process must be gone through. Afterwards sever the bones along the aforementioned joints, also sever the vertebræ of the backbone a little above the tail, and the same a little below the shoulder, when the bone may be extracted, leaving a "pocket" on the right side and one on the left side of the fish, which the cook may fill with force-meat, or what she will.

Try it on the Dab.

As an exercise in skill it is well worth trying, but a dab will give all the practise necessary, or a lemon sole; these need not be wasted, for after the work is done the head and tail may be removed, and the cutting away of the flesh carried down to the roots of the fins, and there are the ordinary four fillets of fishmongering commerce ready for use.

In skinning the sole for the purpose care should be taken to keep the silver skin intact, and all the flesh, otherwise the knife may break through, for on the under side of the sole the thinness of the flesh is quite thin enough to make the "pocketing" tricky to the experienced, without having to encounter the difficulty of a weakened or broken substance.

CHAPTER V

"CRIMPING"

There is one method of preparation which has largely gone out of vogue in these latter years, and that is "crimping." This has nothing to do with irons, or fire, or millinery, although it gave in the old days an opportunity for a first of April pleasantry, in which the new boy was bandied about from one to another in search of the crimping irons.

The Rise of the Vogue of Crimping.

One meaning of the word is to frill or curl, and as crimping was applied to the skate it might be said to give this appearance to the "rings" of fish after they were made ready for sale, and it is extremely probable that from the skate the method grew into more general use.

The skate would appear to have been treated in this way, in the first instance, when caught, to bring about its speedy death; as the fish was brought into the boat a sharp knife drew three cuts to the bone along each wing, parallel to the backbone or centre line, and the fish, although making a muscular movement, was dead before the cuts were finished—a more speedy and satisfactory method of despatch than allowing it to be suffocated at the bottom of the boat.

From the knowledge which would be gained of the peculiar hard condition of the flesh produced under this method, it is easy to trace the evolution by which the fish was dispatched in some other way, and hurried off to market whilst its muscular movement was still existing, when the skin could be taken from the fish, and the cleaning effected, before the wings and other parts were cut and scored by the knife.

What Crimping Means.

The operation of *crimping* fish, says an old authority on physiology, consists in dividing the muscular fibres before they become rigid, and immersing the fish in spring-water. A small part treated in this manner contracts and hardens within five minutes.

Thus, in choosing a fish for crimping—skate, cod, salmon, or plaice—*rigor mortis* must not have set in ; stiffness means that muscular action has ceased, and that the fish is no longer technically *live*, and is useless for crimping purposes. This cessation is not instantaneous over the whole of the fish ; at times, when badly wanted, the fish will be "chanced," and sliced up, when some of it will answer, the remainder taking on what used to be called a *foxy* appearance, the edges of the fibres running flake into flake, having absorbed apparently the water in which it had been steeped.

The Effect of Crimping upon the Flesh of the Fish.

A peculiarity of crimped fish is the power of resistance which it shows to the effect of the water ; instead of attracting it repels the fluid, both in the soaking and in the after cooking ; the bulbous appearance of the sliced fish, every flake in perfect geometric order, comes to the table with only fair care in the cooking, dry-looking, firm, and as solid as when it was put into the pot.

It would be difficult to know for how long the method of crimping has been followed ; as will be seen, speedy transit from the time of catching to the arrival in London is essential, and this was difficult before the era of the railways.

The Well-Boats.

It was in 1712, however, that the first well-boats were constructed for the carriage of live fish to the London markets from the North Sea, when three vessels were constructed and fitted out at Harwich for the purpose, which were afterwards increased until the port possessed, in 1778, seventy-three sail similarly equipped, and, although in the succeeding years, the period of the French wars preceding the Peace of Amiens, the boats were all captured or sold, enough knowledge had been gained and remained, and doubtless the fixed boats at Gravesend were retained, for the steady supply of live fish to the market day by day.

The Origin of the Billingsgate Ring.

After much enquiry and investigation the writer has come to the conclusion that it was because of the establishment of these interim receiving boats at the Nore, and the laying up at Gravesend so as to *feed* the markets as required, that the charge of "a ring" at Billingsgate first took its rise, a charge which could just as rightly be levied against the cold storage business of to-day, which regulates, to an extent, the supply of perishables by giving temporary safety to the commodities which a falling market would depress below their value.

That this was so is indicated by the legislative restrictions which it was sought to impose upon the boats as to the disposal of their cargoes, which disposal was always to be regardless of the needs and the laws of demand and supply.

The crimping of fish then had every opportunity for becoming an established feature of the trade, a feature for whose partial dying out it is difficult to find a satisfactory reason.

Treatment of the Cod.

The cod-fish when it arrives in the shop must not be placed upon a slab, or cold stone, this having the effect of setting or stiffening the fish, but if waiting is necessary, then a wooden tray, a basket, or paper, some non-conductive material, must be used as its resting-place.

The fish needs thorough cleaning first of all, and that quickly, if the best effects are to be obtained. If the fish is to be crimped as a whole, or the head and shoulders in one piece, then the throat-straps are best left uncut—the appearance is better; but if the fish is to be cut in slices, then usually a slice is left on the head, so that there may be an opportunity of selling the piece at a better price than a simple cod's head would fetch.

How to Crimp it.

The first cutting of the knife in this case would be at the junction of the head to the body, scoring deep until the knife-edge is stopped by the backbone; the next cut is made where the slice would ordinarily come, and the cutting of this is taken right through, severing the head and slice from the remainder of the fish. Each slice now is cut away at such thickness as is desirable, the knife being taken clean and clear through the backbone, severing the slice entirely, and so on, slice after slice, until the tail is reached; as each slice is cut it is thrown into a tub of running water, any blood that has congealed in the blood-canal being pushed through or extracted by a skewer or an oyster knife.

The tail is left of such length as to be commercially usable, and is now scored on each side down to the bone with such care that, should it be necessary to part a slice from it, there only remains to sever the backbone and what remains uncut of the fin bones, to do it.

Part and parcel of the cleaning of the cod at the first should be the removing of these fin bones, but cutting as close to the fish as possible.

After the tail has been thrown into the water the head can be finished; the eyes are taken out, the cheeks are scored, escallop pattern, and the two ridges of flesh behind the nose, one each side of the backbone-line, are chined or scored also, and a few marks made on the flaps, if desired; the head should also be thrown into the tub, there to remain in the running water with the remainder for such time as is necessary for the crimped appearance to develop, no longer, or the softness of the dead cod will make an appearance of returning.

"Live" Fish for Crimping are all Dead Fish.

It is obvious that to all intents and purposes the fish was as dead as the proverbial door nail before ever it came into the shop, therefore the outcry about the cruelty of crimping, which thirty years ago did much to kill the trade, was raised in ignorance of the true facts of the case. Said the most eminent surgeon of that day: "I am glad to be able to state not only that the process of crimping does not require the animal to be alive for its proper performance, as some have stated, but that, as a matter of fact, the operation is not done on the living fish."

Dead before it leaves the Coast.

As evidence that he was right it can be stated that the fish when taken alive from either the well-boat or the tanks or cases in which it has been stored, is hit a killing blow above the head, and the fishmonger who knows his business cuts away the flesh from the upper lip backwards and brushes out, with some trouble, the blood which has there congealed, and after that smashing blow it could be said of the codfish as of another, "never a word spake he." In addition the fish travelled from the coast to the market, probably twenty-four hours elapsing from its killing, and were there—which there was not—one vestige of life remaining, it would have fled before the fish was in the fishmonger's shop.

The Cod Crimped Whole.

If the codfish is sold, or wanted, as a whole fish for dinner-party or such like, the method adopted throughout the fish is the same as with the crimping of the tail. The knife cuts to the backbone, but not through it, or so as to make the fish at each cutting carry a cut-through appearance; as the knife is drawn over the flap also it should not penetrate to the body cavity beneath—from one-half to two-thirds of the way through is enough; the head is also scored, and then the fish is thrown into water, a larger tub or tank being required, of course, for the whole fish.

The Crimping of Salmon.

The crimping of salmon is similarly done, except, perhaps, that the head is not ornamented, and this fish, being more expensive, is usually sliced through, and for the tail slices especially the demand used to be a great one.

Anxiously the telegrams were awaited from Gloucester or Worcester saying how many fish were sent, and concluding, "meet 10 train," the fastest means were employed to get the fish from Paddington, and many a hansom-cab, the motor of those days, was used to fetch the precious fish without delay, that it might be cut up with a minimum of the possibility of loss, and delivered in its dainty slices, for evening dinner at the West End Clubs and evening dinner-parties, at which crimped Severn salmon was the chief item of the *menu.*

The Advantages of Crimping.

The custom lingers, but the life of it is gone, perhaps more's the pity, for certainly the fish was of the best, and for many people the crimping gave an added value, the fish being more digestible. An eminent authority says: "The Codfish for some is not so easily taken, but it is not only more palatable but is sometimes more easily assimilated when crimped, and the same may be said of the salmon, a leading characteristic of which is the presence of fat, and in the fresh crimped fish the fat is in a more wholesome state than when, on the second or third day after leaving the water, it becomes oily, and acquires a slight characteristic taste and flavour."

Why Crimping is Unfashionable.

The real objection which can be urged against the practice is that of expense, and as some profess a great admiration of the cheap article there is little to be said, except to express a pity for the lack of knowledge and appreciation. We are inclined to think, however, that in the heyday of the trawling business the difference in price between the plain and the crimped fish was so great that the dearer method of supply fell into desuetude; originally there was only one way the fish could come to market, and that was in the "live" stage, therefore between dead and live fish the difference was inappreciable.

Crimping a Small Salmon.

It would sometimes happen that slices of salmon were required of a size which the fish would not cut into. In such case it would be cut cater-wise, leaving the pectoral fins and a little more of the belly of the fish attached to the head, or the poll slice; each slice would then be cut on the slant, this giving an enlarged appearance to the slices, and, in the writer's opinion, an enhanced look in addition. This is a method of cutting up a long fish which can be followed with advantage when it is smaller than is necessary for the purpose; the section of the fish thus made passing through a larger plane of the fish and making a heavier slice than when, as ordinarily, cut straight through.

Sir Humphry Davy and the Crimped Salmon.

Sir Humphry Davy, the eminent scientist, friend of Sir Walter Scott, and inventor of the miner's safety lamp, was said to have had a narrow-minded contempt for dinners and drink, yet so much did he esteem the crimped salmon, that he gives these instructions to his gillie as to the preparation and dressing:—

"Give him a transverse cut just below the gills, and crimp him by cutting to the bone on each side, so as almost to divide him into slices; and now hold him by the tail that he may bleed. There is a small spring, I see, which I daresay has the mean temperature in this climate, and is much under 60 degrees — place him there and let him remain for ten minutes, and then carry him to the pot, and let the water and salt boil furiously before you put in a slice, and give time to the water to recover its heat before you throw in another, and so on with the whole fish, and throw in the thickest pieces first."

The Rightness of His Methods.

In that description may be found the correct way of crimping salmon and of cooking fish, and as such it deserves the greatest prominence that can be given it, and is worthy of being committed to memory by any man who is a lover of his craft.

Two or three items here are apparent — the crimping water must not be warm or stagnant—nothing could be better than a spring—and the reference to the mean temperature of the climate had doubtless some scientific reason apparent to him if not disclosed to us. Next, that crimped fish, to be prime, wants cooking the same day, the sooner after crimping the better, otherwise the bulbous appearance begins to flatten down. The water should, with the salt, boil furiously; with salt in the water the boiling-point is at a higher degree than the ordinary 212 degrees Fahrenheit, which is one reason why food is better cooked, as well as more palatable, when salt is placed in the water first.

Then ere another slice is put in, the water should boil again; a reason for food being soddened is that too much is expected of one boiling of the water; less put into it at a time, and the larger things first, would remedy many an ill-cooked meal. But perhaps we cannot all be scientists in small things of the Sir Humphry Davy pattern.

Sir Humphry Davy died in 1829, so that the crimping of salmon is of respectable antiquity as fish life goes, although now, we fear, it will be speedily relegated to the things which have been and will not be again.

Crimping the Skate.

The crimping of the skate follows the same rules. The fish must not be stiff, a condition which can be told by sharply flicking the back of a knife across the wings when some muscular movement or reaction is set up against it. In similar fashion, a salmon or cod can be told by the end of the forefinger being sharply drawn down from the lateral line towards the fins, the "live" fish responding or reacting, where the dead remains depressed.

After the skate is cleaned and skinned on both sides, the wing is cut through in parallel lines to the centre of the back, the cut for preference being made obliquely, and as the strip of the required thickness is cut away it is roughly drawn round, spiral-wheel fashion, and thrown into the water. The extreme end of the wing is just scored through bone-deep, and left so; to cut it completely through would be to have strips of fish too negligible in weight and appearance to do anything with. The backbone and fleshy parts of the tail are scored, flesh-deep also, whilst the flesh around the eyeballs is cut right through, the remainder of odds and ends being put into the cutting basket.

The Whitening of Crimped Fish.

It will have been noticed by all who have had anything to do with crimping how much whiter the flesh appears afterwards than when the fish is cut up in the ordinary manner.

Skate especially has a browny-yellow tinge, and the flesh a jelly-like, half-repulsive look when cut up dead, but the crimping alters this, each flake standing out like a mediæval frill or ruff from the centre bone, white and comely, whilst the codfish is of a complexion never otherwise obtained when sliced. Perhaps the only thing which can be urged against the crimping of the salmon is that it is apt to show a poorer colour, partly on account of the crimping and the water in which it is placed, but partly also because the texture of the fish from the Severn and from Christchurch, the two centres for the London supply, have not, in either case, the richness of appearance of the salmon from the Tweed or Tay.

Crimping of the Plaice.

The crimping of the plaice is a thing of the past entirely, but the same effect is produced in the fish, of firm, hard, crispness, combined with whiteness.

The fish was cleaned in the ordinary way, and along each side from the lateral line to the fins a cut was made bone-deep but not through it; this cut was symmetrical, crescent, or straight, as pleased the purpose of the crimper or the person for whom it was intended.

Perhaps the only way in which a boiled plaice is tolerable at all is after crimping, providing the injunctions as to the boiling water are properly carried out.

The art of crimping is dying out, and we regret it, not only for its own sake, but because it gave an opportunity to the fishmonger to be an artist craftsman, who, when he had been entrusted with the crimping of the afternoon's live salmon, considered himself at the top of the tree, and next in line of succession to the foremanship.

CHAPTER VI

THE NATURAL HISTORY OF FISH

It has been left for a severely practical age, imbued with the commercial spirit, and deeply tinged with the desire—or need—to resolve all the problems of Nature into the values represented by the symbols £ *s. d.*, to undertake such enquiries, and conduct such investigations, into the life history of the fishes of the sea, the results of which are calculated to supply the exact data that will suffice, not only to inform the interested and curious reader, but to guide the legislating bodies of the country in their deliberations, and to exert a beneficial controlling influence upon any action that may be designed or undertaken by them.

That an amount of ignorance, amounting almost to denser darkness, upon this important subject has hitherto obtained, is hardly to be wondered at, the fish, for the most part, sojourning at some period of their life history in unknown depths, coming hence and going thence, none knowing surely wherefore or why, nor able to track their movements in the great deep.

Agriculture *versus* Fishery Research.

Herein consists the vital difference in conducting investigations between the two industries, agriculture and the fisheries, that a non-discerning statesmanship has yoked together for departmental work.

To the one you apply your remedies and the manures which are the results of research. Day by day the effects are noted, and good or ill declares itself with every hour's flight; the patient experimenter and the practical man, these move about the scenes of their labour, and by observation the exact results of their industry are recorded, definite and precise, for all men to see and believe.

These pages will point out to the thoughtful mind how widely different is, and must be, the case when the fish are dispersed in a medium through which it is impossible to follow them; not that the problems are entirely insoluble, but they must be attacked in quite other and different manner from that which is pursued in the investigations into agriculture.

Heretofore, over the growth of the fish of the sea has hung the spirit of mystery, but patient, plodding research is promising the key, or keys, of the mystery chambers to whomsoever will follow in its train.

The Rise of Superstition.

As is natural to man in the presence of the profound, the facts which he cannot fathom are handed over to the imagination to solve, and are deftly illustrated and explained with poetry's apt aid. Thus we find the records of the human race amply stored with myth and so-called superstition—which is ancient tradition in current form—passing down to date unchallenged by the enquiring mind, unrefuted because, by the shallow or untrained mind, unrefutable.

The earliest literature sets the example of ambiguity, for whilst the animals which the Jews might eat, or not eat, are carefully detailed, the fish are defined as those that have, or have not, fins and scales, and it is interesting to note further that whilst reference is made in holy writ to fishing and nets, apart from the generic words whale and leviathan, the names of fish do not occur.

Folk-Lore.

The oldest folk-lore in the world includes the fish in its morals and teachings, and all, from the Buddhist in the East to the Polynesian in the West, bring the fish within the scope and scheme of their record of the creation of all things.

As for the growth of folk-lore and tradition, it is also natural that the mysteries of the sea should be illustrated by their equivalents on land; in fact, a common belief was once held that the sea contained a duplicate of every terrestrial animal, in which scheme the lobster was looked upon as corresponding to the lion, the skate to the ox, the eel to the wolf, and the dog-fish to the dog.

Presumably, a resemblance, more or less fancied, existed, as in the celestial science imagination saw the similitudes of animals in the stars, and, as in the case of the dog, connected the beings of earth and sea and sky in one denomination.

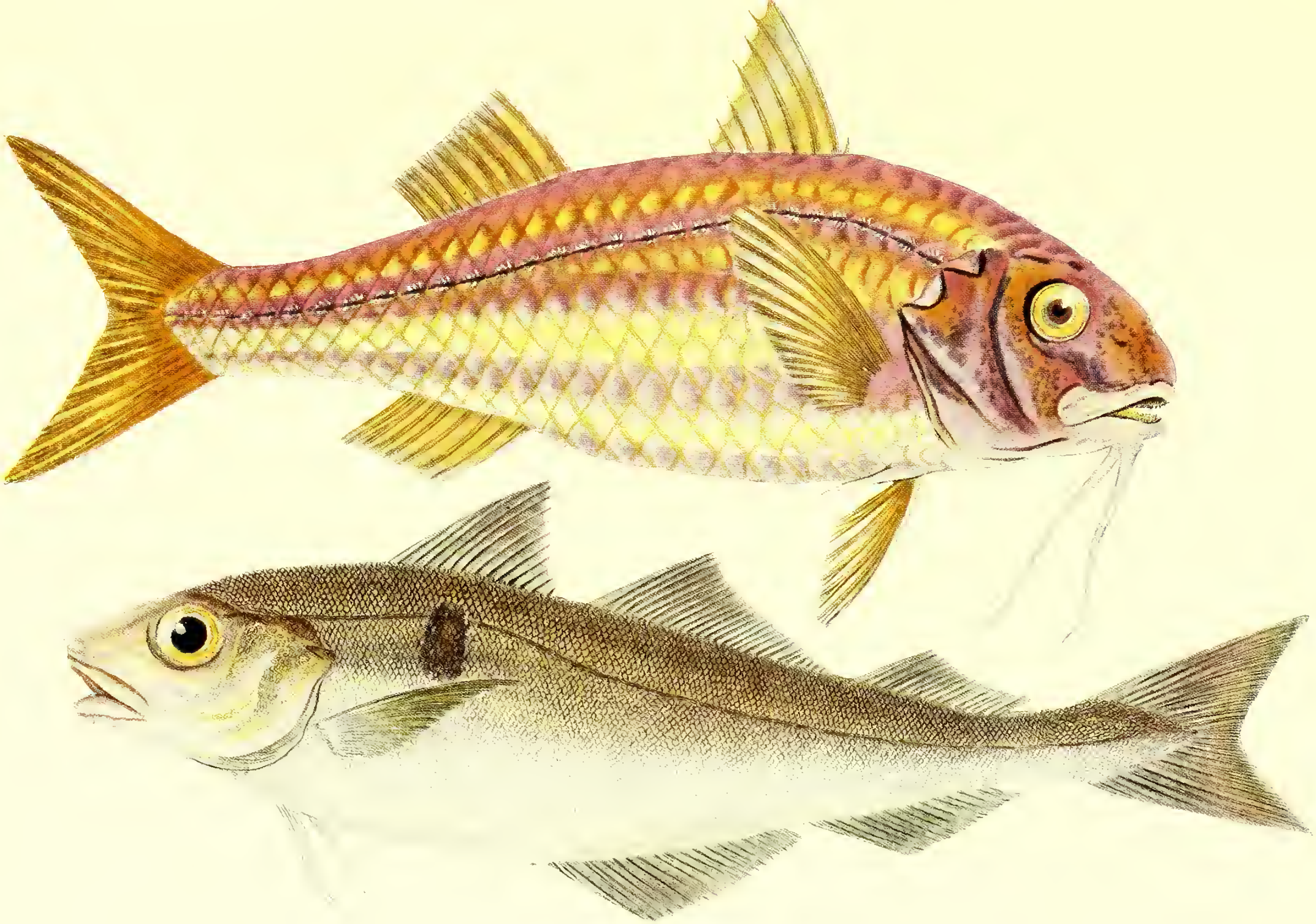
That the method of nomenclature became general is seen in the survival of the compound words sea-cat, sea-horse, sea-urchin, the latter not the least common of all in, or upon, either element.

One author, Sir Thomas Browne, however, in his "Vulgar Errors," published in 1645, says, "If we concede that the animals of one element might bear the names of those in the other, yet in strict reason the water productions should have the pre-nomination," and it would appear that we admit the author's contention when we use the expressive term of land-shark to describe one who feeds upon his fellows, although it would be somewhat difficult to find a species in the sea that does not batten upon its weaker neighbours, and for the most part act the cannibal also.

Wonders of Fish Life.

But is it necessary to go to fable for the wonders of life in the actual world of fish?

The call of the deep was never heard by mortal so insistently as it is by the common eel, which makes its way through water, and waterless, courses until in the deeps its nature is satisfied by the depositing of its spawn, and then, more wondrous still, the tiny elves, the new generation, swarm the waterways and crowd the rain- and dew-



SURMULLET.

HADDOCK.

London: Virtue & Co

damped grass, until they find a home and the possibilities of life and growth in the inland ponds and lakes.

Does the same instinct send them to the waters of their forebears, and, like the young of the swallow, after trackless miles of journeying to and fro, do they come again to the old territory? We know not, and yet the required instinct seems no greater than the marvellous facts of their ascertained life-history justify us in believing possible.

There are fish who "fish" for a living, angling with more certainty than Dr Johnson's fool and a worm, fish who shoot with their tongue, and, chameleon like, live on the insects that are caught; fish who swim in the wet seasons, and yet make themselves houses in the mud wherein to hide whilst the river bed is dried in the tropical heat, and if we are to credit the tales of travellers, even those of repute, we would be asked to chronicle yet stranger things than these.

A writer, Phil Robinson, with light touch thus connects the mythical with the real, the beginnings and the growth of tradition.

> "And since at the first there were only Light and Water, the eldest of zoological myths is the Fish-myth.
>
> "Asia believes the earth to have been saved by a fish, and to be supported on a tortoise; Polynesia, that the earth was brought up, a fish itself, on a fish-hook, out of the primæval ocean; America, that a turtle, the sole tenant of the waste of waters, dived for it into the depths of the diluvian chaos.
>
> "Among the most ancient of Syrian divinities is the fish-form; it is found among the remoter antiquities of Egypt, and primitive Europe saw gods in its fish.
>
> "Thus gradually down through the ages, the same symbol was passed on from nation to nation, and the sea, from its mystery, its acknowledged seniority, claimed conspicuous honours in each Pantheon, until, reaching historic times, we find the Greeks—borrowing they knew not whence—perpetuating the original

> myth, and adding to it as only the subtle Greek spirit could. And how bright their sea-life was, with its goddesses that sailed about in shells, and gods that rode on dolphins; when mariners saw chariots drawn by sea-horses, hurrying alone to scenes of submarine revelry, and heard in the bays the music, bubbling up from the sea-kings' palaces!
>
> "In the beautiful Greek waters were troops of happy people, and it seems no hard fate for Pompilus or for Nais, or any of the other men or women, who for their misdemeanours were condemned to the livery of scales, to have been banished in the Golden Age of fishes from the solid earth to the subaqueous regions where Neptune held his glad court and Amphitrite her revels. And then came those grand old thinking men, trying out of a chaos of superstitions to deduce scientific order, and yet preserving for us in their pages all those credulities which now enable us to retrace the paths of human thought, and locate the sources of human beliefs."

Truth and error, then as ever, seem mingled in the wisest minds. Pliny says he should never end all the stories he knows of the obliging behaviour of dolphins who allowed children to ride on their backs. Mæcenas and Fabianus, in the reign of Augustus, are attestants of the fact that one of these creatures carried a boy every morning to school, and when the lad died the dolphin pined away waiting for him on the shore, and at last expired of grief; and we, in our own day, find foisted on a credulous public a Rougemontade of tales of tortoise-riding and guiding in the ocean of the southern seas.

The Barnacle Legend.

Fact and legend deftly blended have existed together through the ages between those far-off days, and these, whilst legend, bald and unblended, without a show of fact to substantiate it, was also rampant, as witness a paper read before the Royal Society, and published in its transactions, entitled, "A Relation concerning Barnacles by Sir Robert Moray, lately one of His Majesty's Council for the Kingdom of Scotland," from which the following brief notes are extracted and will suffice:—

> "The Barnacle shells hang at the tree by a neck longer than the shell, of a kind of filmy substance, round and hollow, and creased, not unlike the wind-pipe of a chicken spreading out broadest where it is fastened to the tree from which it seems to draw and convey the matter which serves for the growth and vegetation of the shell and the little bird within it.
>
> "This bird in every shell that I opened, as well the least as the biggest, I found so curiously and completely formed that there appeared nothing wanting as to internal parts for making up a perfect sea-fowl. Some credible persons have assured me they have seen some birds as big as their fish."

And much more to the same effect, and this was scientific research recorded by a Fellow of the Royal Society, "who was nominated vice-president and sworn as such" just over two centuries ago!

Modern Superstition.

From such want of knowledge to a recorded incident of a few years since there is not such a great gap as the spread of knowledge would justify us in expecting.

A herring-fisher was brought to a police court for continual ill-treatment of his wife; this he admitted, but explained that it was done, not from ill-will towards her, but to attract the herring—a sort of superstition that has its counterpart in other lands than our own, where the woman is looked upon as a sinister influence, affecting the fish, and fishing questions, and the quantities of fish that are caught.

The *Banff Journal* of 1855 records that, the herring fishery being very backward, some of the fishermen of Buckie dressed a cooper in a flannel shirt with bars stuck all over it, and in this condition he was carried in procession through the town in a handbarrow, to bring "better luck" to the fishing—a survival of the day when living men and women were burned on suspicion of casting an evil eye, or blight, upon the herring fishery.

Neither is it long since, when, a whale ship having fallen in with few whales, the men would burn an effigy of the most unpopular seaman on board to "bring back their luck."

These pages would scarcely suffice to contain all the legendary lore that clusters around the fish of the sea, legend that very slowly yields its precedence to actual knowledge and research such as it is the intent of these pages to record.

The last few years have seen the appointment of an International Council for the Exploration of the Sea, fishery investigation officials, and committees, all concerned in gathering together the actual facts leading to a completer knowledge, which knowledge the writer has sought to incorporate in his pages, bringing before the fishmonger and the public an authoritative natural history up to date.

CHAPTER VII

THE HERRING

"The more he gave the more he had," is a well remembered line by most readers of curious matters, although, being given as an epitaph, one must not place too great a reliance upon its faithfulness to truth.

It is reproduced here, however, to convey the idea, contrary to received opinion concerning other fish, that the more the North Sea is thrashed with the herring nets of the fishing fleets of those countries which border on its margin, the greater is the spoil that is captured by them, as is shown by the fact that the record year of 1912 was surpassed by the latest and greatest record of 1913, the increase in the English catches being given as seven is to five, or in terms of percentage, 38.0 in one year.

For the thoughtful person there is instruction in this fact, first as regards the question of trawling for herring, of which much has been heard of late years. In passing, let it be noted that these two years which followed the great outcry against trawling as being destructive of small and immature fish, and therefore detrimental to the drift net herring fishing, did, each of them, show a very appreciable growth in the numbers of fish landed, pointing clearly to the fact that whatever influence the trawling had exerted upon the industry in other directions, at least, when it came to the fishing, its interference had wrought only good, whether as a result of its work or in spite of it, we will leave to the experts to decide.

Some Statistics.

Contrary to the accepted method of working and the presentation of facts, the writer has chosen to give his statistics as to numbers in the beginning of the chapter.

From the latest available returns from Norway, Sweden, Germany, Holland, Belgium, France, Scotland, England, he has computed the totals of the herring caught by each in the year, and they reach the amazing figures of EIGHT THOUSAND MILLIONS, or, expressed in figures, thus, 8,160,680,000, figures beyond all comprehension, and which the mind fails utterly to grasp.

Were they world-wide the significance of them would not be so great, but seeing that the smallest ocean of all is alone concerned, the North Sea, an area of less than 128,000 square miles—by all strict rights, *the* herring pond—one can only wonder, and pondering, wonder still.

We have seen in our sketch of Lowestoft that, as ages go in the life of worlds, it is not long since the bed of the North Sea, above which roam these countless millions, was joined with Europe, and bore on its raised bosom the Plesiosaurus, the elephant, and other mammoth life, but never gave it greater good to the humanity that then patrolled the world than does the herring to our day and generation.

The struggle for life and existence becomes ever more keen, and the need, or greed, of life fits out year by year still stronger boats and longer nets; also the fish is sought in deeper waters, but ever the supply is greater than the means of catching, and the following season finds the records once again out-paced.

Greater romance was never written, greater provision never made for man, greater and more benevolent history never recorded than that which concerns the one and only king of the sea, the ever-triumphant and democratic overlord, King Herring.

The Name and its Significance.

Whence comes the word? The general opinion is that the Old High German *Heri* or *Heer*, an army, becoming

Hæring in the later Anglo-Saxon, is the root of its existence, proving, if such be the case, that the earliest mid-European civilisation was well aware of the fish and the vastness of its numbers, proving, also, that its abundance is not of recent date, and though the means of access to it possessed by our rude forefathers were not comparable to modern methods, yet they were well aware of its numeric force.

The Romans called their army of soldiers *Exercitatio*, because of the exercising and manœuvring that characterised the life of their legions. *Heer*, or army, came in time to be the title of the fish that above all others wheels and circles unrestingly, and, as far as the continental side of the North Sea is concerned, is fitful and uncertain in its visits, and correspondingly elusive.

Some Early Facts of Herring History.

To this fact we owe the attention that has always been given to our home waters by the fishing fleets of other nations; the Dutch monopolised them almost entirely in the days when we were asleep to the value of the fishing at our doors; the Belgians, our present valued allies, also extended their fishings to our coasts in the twelfth and thirteenth centuries, whilst the Flemish herring was so renowned that the barrels of pickled fish with the mark of the port of Damme—now a picturesque old-world village on the silted-up canal inland beyond Sluys—were appraised as being best of all.

The riches of the Flemings, too, were increased by the permission of our King Edward III. to sell their herring in this country, and to export the money they received for it.

At times the herring came to the Belgian coast, but when they did not the Flemings went afield, as far as Norway, and even Iceland if necessary, to keep up the constant supply for the trade which they had built up.

The Modern Dutch Law of Progress.

In our historical sketch, vol. i., the course of the Dutch fishing industry is given, but it is left for this page to chronicle its great revival, since the new law of 1857-1859 has given free licence and liberty, in place of fishery regulation and restriction.

That law gave the Hollander leave to fish how, when, and where he wished; foreign-caught sea-fish, also, can be imported free; the harbours and markets are open to all the world, and the branding of barrels, inspections, and so forth, are optional and no longer obligatory as before. And the fishery has increased to such an extent that whereas in 1858 16,739 barrels of cured herring were landed, in 1903, 819,440 were brought to shore!

Much of this vast quantity has been gathered from the sea side by side with our own steam-drifters, but without affecting the catchings or interfering with the markets of the Englishman when in due time his landings are barrelled and sent world-wide.

It is well to notice that the old adaptability of the Dutchman to circumstances, as and when they arise, leads him in some years, when, towards the end of the trade in November, the fishing in the North Sea has not been brilliant, to follow the swarms as far south as the English Channel, the men of the Upper and Lower Netherlands as of old, preferring having "too much" than not sufficient, a national characteristic in which they are not altogether alone.

The North Sea as Herring Centre.

That the North Sea remains to all these craft of all the nations the one sure fishing ground is a subject for much wonder and amazement, the more so when it is realised that upon many a bordering shore the fish are erratic beyond all the reasoning of man to find a cause.

Scotland, England, Norway, Sweden, Holland, all have had to deplore from time to time that the fish have forsaken their old haunts, always followed by an endeavour on the part of the fishermen to apportion the why, and the wherefore, and the stigma, of the loss upon some luckless wight who had naught to do with the business.

At the beginning of the last century a clergyman was given a west of Ireland church, and he proceeded to demand a tithe of the fish caught, and, said a Member of Parliament, complaining of the vicar's cupidity, the herring have not come near the coast since.

The cry of over-fishing has been oft repeated, to be as oft-refuted; the coming of the steamboat "has driven the fish away," when with the first appearance of the steamboat in another loch, or frith, the herring have arrived for the first time.

Norway, indeed, passed a law three centuries ago for the express purpose of improving the morals of the people, seeking thus by personal good behaviour to induce the fish to return.

The herrings came again—when they would—there as elsewhere, paying little heed to the firing of guns, the burning of seaweed, the building of lighthouses, the making of noises on shore, the catching of whales, or any other of the reasons that have done duty for an occasion. Cromarty, Ullapool, Fort-William, in our own country; Marstand, Uddevalla, Bergen, and Trondhjem in Norway, have their vicissitudes, flourishing and decaying, as the herring come and go, and others of minor import have lost and gained as destined by the inscrutable wanderings of the fish, but amidst the incertitude of it all the master shoals hold true to the kindred points of the deep waters where they disappear, and the shoal waters where they spawn, and the route is always into the North Sea, and by the way of England's coast-line, with perhaps Lowestoft and Yarmouth as the nearest points of land.

Herrings and Sun Spots.

One Danish Scientist has endeavoured to track out the coming and going of the herring along the Scandinavian sea-border as being connected with the periods of maxima and minima solar spots, which, according to other scientists, are conclusively proved to consist of about fifty-five and one-half years' duration, and the years from 1922 back to A.D. 859 are thus divided, and evidence definite, or suggestive, brought forward to prove the ingenious theory correct.

Of the existing cycle, 1867-1922, it is too early to speak with complete knowledge, although the author is contented that it will work out according to his programme. The rich fisheries for the cycle beginning in 1877 continued from 1880, with fluctuations down to the present, with a maximum period from 1890 to 1895, although, as far as Sweden is concerned, there has been a considerable falling away since, whilst during the whole of the period from 1866 the fishing of Norway has remained fairly constant, but in this connection it must be remembered that the Norwegian long length of coast-line is all towards the North Sea, whilst the Swedish mainly borders the Kattegat and the Baltic.

For this theory to hold good we have first to allow that the solar spots have an influence on the weather, and therefore upon the food of the herring as well as upon the currents of the sea, and that these being the principal factors in the migrations of the herring, do therefore connect the herring with the sun. We leave the entrancing idea to deeper minds, who may be able to fathom and to verify the facts of the idea; for ourselves it is sufficient to record it, and to pass on without further comment.

The Varied Characteristics of each Shoal.

Whence come these shoals? We use the word in its plural sense, for it is obvious that the fish of each district differ in formation. It has been said—but the authority and the professor are alike unknown—that some herring on the north-east vary in anatomical structure from the remainder, but this is not substantiated. What is evident is, that the Scotch East-Coast fish vary in appearance from the Grimsby and Lowestoft, that these again differ from the English Channel fish of Kent and Sussex, whilst the West Country, the Isle of Man, and the Irish coast each produce a type peculiar to themselves; all are herring, all with the same characteristics of anatomy, but not one school confoundable with the other by the man whose practical knowledge has been acquired by contact with them.

The old writers, with little of investigation possible to them, were justified in classifying all as one, and deducing, therefore, the continuous coming around our islands of one vast school, but the modern interchange of thought, and the possibilities of travel, have proved the theory to be untrue.

What is remarkable, however, is that as one shoal finishes, another one arrives, always a little lower down in latitude or following on around the south coast and the west-'ard.

The Problem and the "Schools."

Drawing from out the vasty deep the schools come each to their appointed or remembered place, striking the shoaling water at a tangent, and withdrawing when Nature's needs are satisfied; we use the words *vasty deep* advisedly, for the trawl of to-day scours everywhere within, and up to the hundred-fathom line, and the herring which the trawl brings to the surface are erratic in their incidence, and at the same time differ in appearance from the drift-net caught fish, being apparently as demersal in habit as is the turbot and the sole, from which it is evident that the herring for its recuperation must betake itself to yet lower depths, where trawling cannot harm or reach.

Some have thought the Arctic zone to be the off-season home, and whilst it is recorded that the Russians' nets dropped through a line of broken holes in the ice have secured a catch of fish, the modern opinion does not lean to this region as being the one towards which the fish travel, and where they rest in security.

Notable, also, is the fact that the school of one year is followed the next season by a school whose characteristics are similar and betoken them as the same fish, as, undoubtedly, many of them are, but the mystery is that the spawn, for the depositing of which the shoal comes landward, which was left behind the preceding year to hatch out, become *whitebait* and then yearling herring, developing thus always away from the main army, yet survives the separation and becomes in due time merged into the parent shoal.

To us at present such things are incomprehensible, so much so that one is inclined to doubt whether a solution and understanding will ever be arrived at, or the ways of the herring in the great deep made known.

Spawning Investigations.

Investigations more or less sporadic have been made into the spawning history of the herring from the autumn of 1861 onwards, and these have satisfied the observers that the spawning, though it may be made twice a year, the end of the winter and the end of the summer, in the same neighbourhood, yet each deposit is from a separate school of fish, which fact opens out before us yet other peculiarities for which there does not at present exist any explanation. First, that two schools of fish, and even three, may come towards the same stretch of shore-line during the same year for the purpose of spawning, and, more inexplicable still, if spawning is to be looked upon as the supreme effort of the fish in its prime, which primeness is the result of the wealth of food obtainable from the sea during the precedent period, and which period is ordinarily considered to be the summer months when animalculæ abound, yet on the east coast of Scotland ripe herring occur from January to March and onwards, during and after the period of coldest weather.

It has, however, been noted that winter spawning herring affect the neighbourhoods where brackish water abounds, mouths and estuaries of rivers, and so forth, whilst the summer herring, although coming to the same coast, content themselves with the off-shore and deeper waters.

Ever southwards the succeeding schools and shoals, each at its own regular and appointed season, are found to be spawning until December, at which time the winter herring are off the Forelands and the coast of Kent generally, the summation of all being this, that herring in mazy condition are to be found every month in the year at some portion of the coast-line, the word *mazy* being an East Anglian term, meaning ready to, or in the process of, spawning.

Spawning and its Enemies.

Considered as fish it cannot be said that the herring is a heavy spawner; one authority gives 68,608 eggs in a ripe fish, others say from ten to thirty thousand represents a fair average, whilst the careful calculations made by Dr Fulton of sixteen specimens 9 inches to 12 inches long, gave 21,000 to 47,000, with an average of 31,000 as the result.

Considering the number of enemies, however, that the herring spawn has, one cannot but wonder that the fish should increase as it does.

The haddock, for instance, is an inveterate foe, so much so that the existence of the spawn is said to be evidence of an abundant supply of haddock in the vicinity, either for line or trawl fishing, it being recorded that on one occasion a steam-trawler fishing over a well-known herring spawning ground, had to tow his trawl to harbour, it being so full of fish, all gorged with herring spawn, that it could not be hoisted in-board.

In passing, one might suggest that the increase in the herring fishing of 1913-1914 has some connection with the scarcity of the haddock during the last few years, a scarcity shown by the fact that whereas the average price per hundredweight landed in England and Wales was 10s. in 1906, it had risen to 17s. 2d. in 1913.

Whatever influence temperature has upon the fish itself and its habits, it would appear to affect the hatching of the spawn. Investigations instituted by the Prussian Ministry of Agriculture, and continued through eight or nine years, went to prove that spawn kept in water at a temperature of 32° took forty-seven days to hatch, and many of the larvæ were deformed; at 33° and 34°, however, none were injured, and the hatching out took place in less time. English observation has shown that at a temperature of 48° twelve to fourteen days only were needed, whilst with water heated and kept to 52° to 58° the larvæ came into existence on the eighth or ninth day.

Herring Spawn for New Zealand.

These experiments on the face of them appear to be without great value to the practical side of the question, but the knowledge thus gained suggested further observations on behalf of the New Zealand Government for the purpose of transporting the fertilised eggs to the waters of the Two Islands. As a consequence 60,000 eggs were shipped in January 1913 with an attendant, the water having to be kept at a temperature of 35.5° Fahrenheit, which was calculated to retard their development for fifty-five days. Dirty water, rust, and sediment, in consequence of an accident, spoiled the experiment on the 12th February, after having safely passed the Equator and The Cape: says the record in the 1913 report of the Scottish Fishery Commissioners, under whose auspices the work was undertaken, "The ova were found to be impregnated through and through with rust, and no trace of a live embryo was detected," but that the experiment may be regarded as successful is shown by the fact that at the Equator all was well, few eggs had died, and the outline of the embryo could easily be seen.

Remembering the great difficulty experienced in transplanting the common bumble-bee to New Zealand and the ultimate success, with all that it meant to the colonists, we do not despair in the near future of learning of yet another emigration from the "Auld Country" of a school of herring.

Spawning of the Herring.

Surprise may be expressed that the shoals of herring should assume their vast dimensions, although, as fish go, the herring is by no means a prolific spawner, from which one would infer that the circumstances of spawning assist a larger proportion than ordinary of the spawn to become effective, and fishermen of experience confirm this by telling that the male fish first visit the locality, being ripe, and by casting the milt into the water prepare it for the shedding of the ova of the female fish, which, after impregnation, sinks downwards and attaches to any material that happens to be handy, especially on a rough ground. In this latter movement the ova differs from that of the mackerel or cod, which have a globule of oil allowing them to float—presumably to encounter greater dangers than does the sunken herring roe.

Herrings do not take kindly to transported life, or a life after hatching-out artificially, although they have been maintained for five months, at the end of which time they had reached the larvæ or whitebait stage, of about two and a half inches in length.

The Development of the Ova,

The egg of the herring may be taken to be one-seventeenth of an inch in diameter, and around the circumference of it the herring grows, until head and tail almost meet, when the latter becomes free, and the larvæ gradually unrolls, or unfolds, being then approximately one-fifth to one-quarter of an inch in length. Its first business is to absorb the yolk-sac, of which the remainder of the egg is composed, when its jaws develop and the fin rays in the tail and back appear—this, when the new creation is about one half of an inch in length.

The most important changes in the spring-hatched fish take place when it approaches the age of three months, and is between one and two inches in length. The scales begin to develop, the body grows in girth, the skin assumes the characteristic silvery layer, and the fish approximates to the appearance, in miniature, of its full-grown self. The German naturalist, Meyer, has devoted a large amount of time and care to the subject; from his observations we learn that the fish during the first year reaches a growth of six inches, growing fairly consistently in the open waters at the rate of half an inch each month.

And of the Fish.

The autumn herring, November spawning, do not make the progress which the spring fish do, being, according to the naturalist quoted above, less than four inches in length at ten months old, accounted for by taking a longer time to develop in the colder waters of the winter, the passing from a larval stage being also delayed, so that the perfect form of the fish was never reached until it was two inches long.

The mature size, when the growth of the roe begins, does not seem to be attained until the fish is in its second year and about eight inches long, beginning to spawn at two years of age, and continuing each year—for how long?

The Scale Rings of the Herring.

An interesting microscopic study of the rings upon the scales of the herring has been undertaken, and is still proceeding, from which it would appear that each year of growth is marked by another ring, as in the well-known case of timber-trees, and in the otolith or ear-stone of the plaice, and if these lines should prove to be final in their declaration of age, then it is evident that the herring can be of seven, eight, and nine years of age, and, further, they would prove that the spawn of some years is far more productive than others, 1904, for instance, being a particularly prolific year, as far as the actual life resulting is concerned.

Dr Johan Hjort, the Director of Fisheries in Norway, claims to find in samples of Norwegian spring herring caught in 1908, 35 per cent.; 1909, 44 per cent.; 1910, 77 per cent.; 1911, 70 per cent.; 1912, 64 per cent.; 1913, 65 per cent. of the total catch as belonging to the 1904 hatching.

It will be seen that over half of the fish taken, and thus examined, belonged to the favourable year's spawning, and brings the possible age of the herring to nine years. We shall await the Doctor's future investigations with interest, especially on the latter point, as it will enlighten the student considerably in his study of a difficult part of the subject.

The Food of the Herring.

That there is a close connection between the amount of available food and the growth of the herring it is easy to understand, and although it is commonly supposed that the herring lives on suction, yet their own young, their own spawn, scales, and young sprats have been found within the stomach, whilst anything from fifteen to sixty thousand crustacea have been counted there, most of which are less than one-twenty-fifth of an inch in length, but in the spawning season the intestines may be empty; although of such minute order, the names of the species upon which the herring delights to feed are more formidable, *Temora Longicornis, Lestrigonus spinidorsalis, Evadne Nordmanni*; sessile-eyed crustacea; entomostraca; and stalk-eyed crustacea, are amongst the generic families from whose lists these and yet other equally fearsome creatures are taken—taken also by the herring, who thrives apace, according as Nature keeps up the supply, and this need not be wondered at when "the mighty whale derives the food material which builds up his vast frame and bulk from microscopic organisms, thousands of which could be contained upon a shilling piece."

But temperature, saltness of water, currents, have to do with herring life and growth, but their full and complete influences will not be worked out for some years yet, although an early treatise upon the subjects is promised by the International Council.

The Barometer of the Herrings caught.

The concern of the fishmonger is with the developed growth, his interests coming in mainly after the period of maturity is reached, and when they have come in their shoals to where the fishing-nets do congregate.

That the trader may have them by him for ready reference, two tables are here given of the catch of herrings

Extracted from Report by The Board of Fisheries for Scotland, showing the Quantity of Herrings landed in each District, Scotland, in each Month of the Year 1913.

District.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.
Eyemouth . .	185	84	749	..	6,552	35,999	44,097	17,209	9,397	..	..	..	114,272
Leith . . .	7,772	2,205	499	31	212	38	151	186	155	126	117	1,034	12,526
Anstruther . .	3,589	16,783	10,871	420	7	5,753	13,666	6,009	1,320	..	7	63	58,488
Montrose . .	1	..	10	66	70	1,640	6,673	4,377	..	..	..	..	12,837
Stonehaven .	..	..	..	7	182	637	371	133	..	..	..	..	1,330
Aberdeen . .	34	583	376	341	2,902	51,545	106,400	96,593	6,979	3,060	230	124	269,167
Peterhead . .	..	1,155	1,428	..	37,807	209,731	262,279	245,213	17,279	..	..	..	774,892
Fraserburgh .	367	..	186	..	24,906	154,564	178,913	271,999	19,498	..	..	..	650,433
Banff . . .	11	77	217	..	2,290	5,558	4,132	6,815	1,158	..	..	..	20,258
Buckie . . .	767	106	236	..	574	5,894	5,628	6,097	1,478	..	..	..	20,780
Findhorn . .	758	7	105	..	210	3,002	1,732	3,468	1,253	934	715	91	12,275
Cromarty . .	..	..	..	..	..	..	30	..	..	129	35	..	194
Helmsdale . .	..	..	..	..	..	175	28	91	7	..	..	..	301
Lybster . . .	..	..	..	..	..	333	626	927	85	..	..	..	1,971
Wick . . .	29,157	13,715	4,085	4	11,461	63,978	110,006	179,999	14,742	112	5	34	427,298
Orkney . . .	431	..	..	..	8,372	75,943	116,784	111,247	5,617	..	..	..	318,394
Shetland . .	11	16,897	7,430	2,464	221,434	290,001	43,867	89,721	37,243	231	..	..	709,299
Stornoway . .	138,123	171,116	57,285	141	27,422	29,251	31,719	15,170	11,909	7,067	13,646	21,401	524,250
Barra . . .	812	2,989	1,017	959	32,232	55,363	19,439	4,683	428	91	784	560	119,357
Loch Broom .	717	1,009	..	..	38	222	583	1,264	6,981	3,810	..	2,065	16,689
Loch Carron and Skye .	10,814	2,394	224	..	144	2,637	5,531	2,728	5,158	680	4,495	5,302	40,107
Fort-William .	39,502	25,741	4,486	52	15,763	10,664	3,417	5,070	2,888	1,240	3,906	7,078	119,807
Campbeltown .	1,648	3,815	7,771	17,735	8,967	8,992	8,376	14,898	30,368	14,971	4,350	1,987	123,878
Inveraray . .	..	..	..	91	266	763	3,458	4,172	1,267	112	490	77	10,696
Rothesay . .	397	282	758	374	91	3,053	3,318	2,303	1,083	214	70	196	12,139
Greenock . .	343	35	560	1,547	224	375	143	599	11,721	7,157	557	1,170	24,431
Ballantrae . .	2,932	30,452	88	304	726	1,970	955	2,327	1,963	195	245	11,095	53,252
TOTALS 1913	238,371	289,445	98,381	24,536	402,852	1,018,081	972,322	1,093,298	189,977	40,129	29,652	52,277	4,449,321
TOTALS 1912	65,576	109,814	71,923	11,062	671,341	1,421,143	1,682,495	881,548	114,506	58,358	27,960	85,520	5,201,246

Extracted from Report by The Board of Fisheries for Scotland, showing the Quantity of Herrings landed in each District, Scotland, in each Month of the Year 1912.

District.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.
Eyemouth	571	2,478	2,156	18	9,593	28,375	28,067	29,705	5,411	..	..	..	106,374
Leith	2,585	3,542	1,909	69	419	435	699	155	284	247	251	373	10,968
Anstruther	5,641	33,484	19,541	1,424	14	663	6,541	9,114	652	..	28	63	77,165
Montrose	..	..	119	28	537	1,402	13,133	13,600	27	..	..	..	28,846
Stonehaven	..	..	..	56	294	2,303	4,540	1,897	..	..	..	..	9,090
Aberdeen	..	332	998	1,004	9,562	52,913	92,058	53,924	10,490	964	79	95	222,419
Peterhead	..	14	511	49	40,884	220,217	250,275	159,859	18,556	..	..	3	690,368
Fraserburgh	..	..	..	..	17,680	207,757	305,063	160,800	9,695	..	..	..	700,995
Banff	..	98	137	..	2,209	8,180	8,430	6,511	606	..	..	..	26,171
Buckie	..	46	51	..	6,296	16,352	9,589	8,302	109	..	..	..	40,745
Findhorn	3,739	3,699	4,355	..	1,512	5,897	4,014	2,628	2,336	4,650	4,989	2,081	39,900
Cromarty	..	..	..	..	..	..	..	..	..	174	..	..	174
Helmsdale	..	..	..	..	21	56	35	7	..	..	..	..	119
Lybster	53	..	..	..	123	532	54	133	..	..	..	..	895
Wick	294	1,156	641	..	60,831	210,575	220,753	98,725	3,710	11	18	1,761	598,475
Orkney	11	..	..	..	39,510	152,391	254,022	95,022	98	..	63	..	541,117
Shetland	..	5,376	5,785	620	360,900	446,341	415,963	137,264	13,755	6,877	871	..	1,393,752
Stornoway	7,334	28,372	23,666	70	64,803	19,930	34,915	60,871	8,607	1,353	5,539	29,099	284,559
Barra	193	35	..	..	23,296	19,561	7,389	3,707	2,408	648	589	..	57,826
Loch Broom	81	86	98	..	46	58	195	1,719	4,074	3,878	466	248	10,949
Loch Carron and Skye	7,938	2,447	185	21	599	1,131	5,475	10,448	5,391	11,666	5,523	7,812	58,636
Fort-William	10,360	18,176	2,250	..	12,381	4,742	637	2,811	3,073	2,500	1,020	31,264	89,214
Campbeltown	990	1,008	5,516	6,814	15,106	14,701	10,185	1,785	20,686	23,696	4,415	907	105,809
Inveraray	..	..	28	140	1,372	1,337	1,872	1,152	241	483	781	266	7,672
Rothesay	..	12	44	504	776	1,177	2,175	6,916	2,507	318	1,121	532	16,082
Greenock	3	..	112	134	1,535	915	1,209	10,959	689	340	1,875	313	18,084
Ballantrae	25,783	9,453	3,821	111	1,042	3,202	5,207	3,534	1,101	553	332	10,703	64,842
Totals	65,576	109,814	71,923	11,062	671,341	1,421,143	1,682,495	881,548	114,506	58,358	27,960	85,520	5,201,246

at each district in Scotland for 1912 and 1913, taken from the Thirty-second and Thirty-third Annual Reports of the Fishery Board for Scotland.

From a perusal of these records will be gathered by the fishmonger the definite knowledge — where too often he has but a hazy idea—of the northern districts from which come the supplies at certain seasons, and upon which he must rely for the continuous keeping up of the trade in the herring, the fish which is ever with us throughout the year.

It will be noticed that the quantity is less in the second table than the first by 750,000 cwts. This was accompanied, however, by the highest realised price on record, being greater by £177,221 than in 1912, or 9s. 4½d. per cwt. as against 7s. 4d. per cwt. in 1912—a rise this that corresponded to the increase of food prices generally as well as of fish throughout the year.

The latter year was remarkable also for the record catch by one boat. We give it here in the simple words of the fishery officer for Fraserburgh from his report for the year:—

"On 25th August the crew of the sail boat *Majestic* shot their nets about 15 miles off of St Combs; it took three boats and their crews to haul and bring the catch to port on the following day, and the fleet of seventy-five nets produced 364 crans, about 64 tons, valued at £826, a record shot for both quality and value."

Whilst recounting the record catch of the drift boat we would note the success of a single pair of boats, four men each, who also, in 1913, are reported to have earned in the Campbeltown district upwards of £4,000.

The time was when it used to be said that the fishermen did all the work and took all the risk, whilst some one else took all the cash, but this can be no longer true in face of the earnings by the boats in the two years of 1912 and 1913, the net earnings of the steam fishing fleet of Scotland at the Scotch, and afterwards at the English, herring fishings being given as £1,230 per boat for the latter year. In addition to this, many of the boats engaged in the Irish herring fishing and also in the West Coast herring fishery, the former not very remunerative, but "very good earnings were made on the West Coast."

As further illustration of the rise in values of the Scotch herring it may be stated here that as recently as 1904 the value per hundredweight was 3s. 9d., in 1908, 4s. 0½d.; in 1911, 6s.; in 1912, 7s. 4½d.; and 1913, 9s. 4½d., whilst, as showing the increase in the number of herring cured in Scotland, we may be permitted to quote the figures for 1811, 90,000 barrels, for 1911 2,046,741 barrels — figures which speak more than volumes of words as to the industry of the northern half of the kingdom and the national regard for the value of statistics, which has made it possible to obtain a record for all the intervening years.

The English Fishery for Herring.

In the following pages in similar tables, extracted from the "Annual Reports on Sea Fisheries," is given the totals of the English herring catchings at the various ports around the coast.

For the reader whose business is in England these will be of even more value. A consideration of the totals month by month for the two years will give the mean average catch and the possibilities of getting into business touch with the various fishing centres as the seasons progress, whilst the small figures, preceding the name of the port, give the sequence of each port as to its landing quantities for the year.

QUANTITY OF HERRINGS LANDED AT EACH STATION, ENGLAND AND WALES, IN EACH MONTH OF 1912.

EXTRACTED FROM REPORT BY BOARD OF AGRICULTURE AND FISHERIES ON THE SEA FISHERIES OF ENGLAND AND WALES FOR 1912.

Station.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	TOTAL.
	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.
1. Yarmouth	..	..	..	23	450	329	446	12,743	314,805	1,686,091	377,062	5,573	2,397,522
2. Lowestoft	54	..	136	4,020	2,690	271	1,162	3,397	170,170	1,184,698	317,586	15,030	1,699,214
3. Grimsby	1	..	..	7	..	..	1	51,983	218,045	163,713	15,315	49	449,114
4. North Shields	11	1	..	726	35,591	44,891	60,282	64,486	20,348	2,548	61	5	228,950
5. Hull	..	..	..	..	..	..	5	4,917	122,210	40,197	129	43	167,501
6. Scarborough	..	..	..	..	..	..	414	25,427	62,614	857	..	..	89,312
7. Hartlepool	..	..	..	334	3,737	3,419	6,096	24,244	22,787	210	17	..	60,844
8. Blyth	..	..	..	..	1,699	3,644	9,833	31,562	5,485	185	..	..	52,408
9. Berwick	..	..	..	..	8	3,968	19,496	20,147	1,612	..	..	..	45,231
10. Fleetwood	21	..	..	60	13	82	162	5,847	26,708	1,422	1	..	34,316
11. North Sunderland	..	..	..	..	600	3,149	7,878	13,188	693	..	..	..	25,508
12. Plymouth	17,209	..	..	..	..	45	..	20	16	12	20	818	18,140
13. Port St Mary	..	..	..	..	..	..	3,367	7,291	5,404	48	..	..	16,110
14. Hastings	10	..	..	..	56	218	131	..	..	403	10,112	2,807	13,737
15. Peel	..	..	..	..	566	1,546	3,711	4,226	1,310	266	..	..	11,625
16. Milford	1,830	2	..	..	..	117	48	1,668	6,878	738	29	..	11,310
17. Liverpool	..	14	..	..	..	12	57	1,431	3,944	94	1	1	5,554
18. Craster	..	..	..	..	302	1,178	1,624	1,403	49	..	..	..	4,556
19. Folkestone	..	..	..	..	50	183	29	..	..	24	3,374	789	4,449
20. St Ives	..	..	..	..	11	20	..	..	..	37	2,653	650	3,371
21. Whitby	..	..	..	..	..	168	..	1,041	1,740	..	..	..	2,949
22. Newhaven	..	..	..	..	..	..	..	..	..	9	1,910	823	2,742
23. Exmouth	1,752	140	..	..	..	..	..	..	..	..	638	206	2,736
24. Torquay	399	14	..	..	..	..	..	181	40	315	911	528	2,388
25. Padstow	..	..	..	..	..	..	..	..	..	..	1,918	204	2,122
26. Dungeness	..	..	..	..	..	..	..	..	..	595	1,348	70	2,013
27. Newlyn	..	..	..	..	..	228	11	..	..	..	808	966	2,013
28. Beadnell	..	..	..	..	..	..	744	820	..	..	..	..	1,564
29. Dover	..	..	..	..	..	..	..	..	..	1	944	612	1,557
30. Port Isaac	..	..	..	..	..	..	..	..	..	372	956	166	1,494
31. Bridlington	..	..	..	..	..	..	..	..	24	1,231	178	..	1,433
32. Brighton	..	..	..	..	..	..	..	..	..	227	1,055	39	1,321
33. Brixham	24	5	..	..	..	..	..	..	..	115	784	364	1,292
34. Staithes	..	..	..	..	..	25	240	911	..	..	..	..	1,176
35. Clovelly	13	..	..	..	..	..	..	..	6	163	591	311	1,084
36. Beer	525	238	..	..	..	..	..	..	..	..	2	292	1,057
37. Southwold	53	..	..	..	109	..	..	..	294	258	312	..	1,026
38. Teignmouth	147	2	..	..	..	..	..	5	3	131	529	193	1,010
39. All other Stations	662	57	..	5	136	486	366	439	309	1,513	2,404	1,015	7,392
TOTAL	22,711	473	136	5,175	46,018	63,979	116,103	277,377	985,494	3,086,473	741,648	31,554	5,377,141

Quantity of Herrings landed at each Station, England and Wales, in each Month of 1913.

Extracted from Report by Board of Agriculture and Fisheries on the Sea Fisheries of England and Wales for 1913.

Station.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.
1. Yarmouth	..	..	..	22	90	390	3,747	8,610	92,902	1,953,300	1,004,637	58,584	3,122,282
2. Lowestoft	..	..	32	4,303	718	606	603	1,612	13,364	1,296,619	758,015	75,591	2,151,463
3. North Shields	..	27	5	338	31,792	89,824	196,926	122,391	46,882	11,870	661	2	500,718
4. Grimsby	21	..	292	7	36	3	7,137	63,513	191,420	130,638	13,627	11	406,705
5. Hull	110	32	87	67	3	..	34	15,522	87,770	92,231	7,378	22	203,256
6. Blyth	..	10	59	..	1,189	9,921	78,536	63,183	2,733	..	12	..	155,643
7. Hartlepool	..	..	7	181	2,610	6,430	49,122	58,782	31,385	5,839	177	9	154,542
8. Scarborough	..	..	..	..	..	..	13,962	66,743	45,568	1,666	185	..	128,124
9. Peel	..	..	..	..	308	540	13,059	75,515	20,521	310	..	..	110,253
10. Fleetwood	..	17	..	58	..	..	113	25,897	28,697	11,334	139	..	66,255
11. Berwick	..	..	..	..	271	12,281	27,611	14,019	4,739	..	..	..	58,921
12. Port St Mary	..	..	..	..	..	656	16,414	25,030	6,244	..	..	..	48,344
13. North Sunderland	..	..	..	..	1,015	9,529	12,910	9,020	587	..	..	..	33,061
14. Newhaven	..	..	..	..	..	..	..	..	..	..	2,438	24,346	26,784
15. Milford	..	19	..	..	..	7	2,696	9,196	9,411	2,374	13	6	23,722
16. Plymouth	7,353	..	..	..	..	29	..	1,335	100	..	..	14,220	23,037
17. Hastings	..	..	..	..	..	29	..	..	..	..	6,262	8,740	15,031
18. Liverpool	2	..	5	6	..	12	829	6,457	6,879	1	..	1	14,192
19. Folkestone	..	..	..	..	..	8	..	..	..	..	2,134	4,722	6,864
20. Craster	..	..	..	..	344	2,214	1,960	793	77	..	..	..	5,388
21. St Ives	..	..	..	..	4	7	..	..	..	2	3,291	2,024	5,328
22. Brixham	59	27	..	..	..	..	..	..	..	23	2,756	2,393	5,258
23. Dungeness	..	..	..	..	..	..	..	..	..	..	3,729	1,514	5,243
24. Whitby	..	..	..	..	..	150	342	2,168	1,710	..	..	..	4,370
25. Brighton	..	..	..	..	..	..	..	..	..	..	1,144	3,018	4,162
26. Bridlington	..	..	..	..	..	..	..	..	5	11	1,651	1,253	2,920
27. Exmouth	1,057	560	8	..	..	..	..	..	..	..	135	1,045	2,805
28. Teignmouth	677	110	..	..	..	..	..	1	..	949	255	595	2,587
29. Eastbourne	..	..	..	..	..	..	..	..	..	..	799	1,723	2,522
30. Torquay	516	142	..	..	..	..	..	11	..	167	749	563	2,148
31. Port Isaac	..	..	..	..	..	..	..	..	..	..	1,691	255	1,946
32. Budleigh Salterton	248	34	..	..	..	..	..	..	..	..	53	1,331	1,666
33. Cromer	..	..	..	..	..	..	..	..	..	170	1,343	52	1,565
34. Clovelly	..	..	..	..	..	..	..	..	..	36	774	520	1,332
35. Padstow	..	..	..	..	..	..	..	..	..	..	959	100	1,059
36. Beadnell	..	..	..	..	..	..	318	690	..	..	..	..	1,008
37. Staithes	..	..	..	..	..	109	570	274	47	..	..	..	1,000
38. All other Stations	565	176	19	3	23	187	543	1,107	413	679	4,106	4,100	11,921
Total	10,610	1,154	514	4,985	38,403	132,932	427,432	571,869	591,454	3,508,219	1,819,113	206,740	7,313,425

A further dissection of the grand total gives us as caught by—

	Cwts.
Drift Nets	6,783,136
Trawl ,, ...	528,356
Seine ,, ...	1,018
Fixed ,, ...	915
	7,313,425

—representing an increase in quantity over 1912 of nearly 2,000,000 cwts., or 36 per cent., whilst the landing value was increased by £654,260, or 39 per cent. Thus the decline in the total catch of the Scotch fishings was more than made up, and the increased values per hundredweight more than maintained.

The Norwegian Herring Trade.

As completing the cycle of the year, from the fishmonger's point of view, it should be mentioned here that he may look for the first arrivals of Norwegian herrings, *viâ* Hull and Newcastle, towards the end of November, continuing, weather and other circumstances permitting, well into April; this constitutes the winter fishing for the large herring, *Storsild,* which is carried on to the north of the coast by the provinces of Romsdal, Nordland, and Tromso.

The spring herring, *Vaarsild,* caught mostly on the south-west coast by the towns and district of Stavanger and Hangesand, do not come in quantities to England.

One method of Norwegian capture is entirely different from our own practice. The plan of procedure is to place a sweep Seine, or series of nets, across the mouth of a small cove, or part of a fjord, and block the exit for such fish as happen to be within, the fishermen then with smaller nets drawing out the daily supply as required for the home market or the demands of the export trade—a method which the peculiar formation of the Norwegian coast makes possible, and one which would appear to allow of large captures at a very small outlay for nets and outfit generally.

The Size of the Herring.

Herring reaching a size of 17 inches in length are recorded from Loch Fyne, Iceland, Labrador, accountable, probably, from the assumption that there are in these three districts a wealth of suitable food within a very small area, requiring thus less muscular exertion to obtain it, with the net result that a larger proportion is retained wherewith to supply the growth of the fish itself.

The Loch Fyne Fish.

The decline in the Loch Fyne output is greatly to be regretted, although comfort can be taken that these fine—perhaps the finest—herrings have proved themselves erratic in other years than these, which leads to the hope that once again they will make this Loch their home. The fluctuations will be seen from the following series of figures:—

1868	40,000 Crans.
1871	13,515 ,,
1873	3,648 ,,
1876	22,836 ,,
1878	8,890 ,,
1882	55,754 ,,
1907	3,914 ,,
1910	10,405 ,,
1913	3,056 ,,

Thus, it will be seen, the fishing is neither consistently good or bad, although worse than the last three years can scarcely be, there being in 1911-1913 less fish caught than in 1910, and yet comfort can be taken from the fact that in 1873 and 1874 an equally low ebb was reached, to be followed in a few years by the record catch of 55,754 crans.

The Names of the Herring.

The names under which the herring is known are many, as befits the universality of the fish — blue-back, capon, cob, corphun, herring-bairn, herring-cob, Norfolk capon, rooks, sill, sodger, tow-blowen, yawlings — these are among the titles common in various districts.

Many of them may be explained without the need of an archaic dictionary; the sodger would correspond to soldier, red coat, to whom the bronze red herring would be likened. Yawling or yorling would be yearling; capon, the deriding, or contented, word, as meaning the best feast which can be provided, used in the same sense as when now we say "the poor man's two-eyed steak."

The Bloater.

The bloater is said to mean a soaked fish; and a herring thrown into a strong pickle and thus soddened and hung up to be dried off quickly in the smoke will make a plumper fish than if dry salted, which is the accepted, and the best, method, but if this were so in the earliest days the word had come to mean smoke in Beaumont's and Fletcher's, the dramatists, days, where we have the line, "I have more smoke in my mouth than would blote a hundred herrings," and in Ben Jonson's *Masque of Augures*, "like so many bloat herrings newly taken out of the chimneys."

The Red Herring.

The red herring, as well as the bloater, had its beginning with the need to preserve a few herrings from day to day, and the wood fire of the open hearth, the reredos, which had not a chimney above it, provided the smoke whereby either red herring or bloater was made according to the time the fish were left hanging in the living room, which was common to the house for all purposes.

In connection with the red herring there was an old custom observed at Queen's College, Oxford; the first dish brought to the table on Easter Day was a red herring riding away on horseback, that is to say, the herring placed by the cook something after the likeness of a man on horseback, set in a corn-salad. "This," said Hone, "is the only vestige of the pageants which formerly were publicly exhibited by way of popular rejoicing for the departure of the forty days' Lent Fast, and the return to solid eating, with the Easter Festival."

In passing it may interest the reader to know that the proverb, "Neither fish, flesh, nor good red herring," is taken from the Collection of John Heywood, made in the year 1546—a proverb that has endured unchanged through five hundred years to our knowledge, whilst, if we knew the date of its birth, possibly five hundred years earlier still, we would be able to form an opinion as to when the red herring became a part of the English diet.

The Kipper.

The kipper takes its name from the Dutch *kippen*, "to hatch," used more particularly to denote a male salmon after spawning time when it is thin and poor; being thus but indifferent food, unfit for cooking fresh, especially in the days when a plentiful supply, perhaps to surfeit, had been obtained whilst the rivers were in full spate and the fish were in full flesh, the kipper was split, salted, and smoke-dried, for winter consumption. Another authority gives the word as taken from *kype*, a hook, and the hook-shaped lower-jaw of the male salmon at and after spawning time is the characteristic feature of the pugnacious kelt whom Nature seems thus to provide at this season with a head-formation designed to protect the female fish and to quarrel with effect with all who might disturb or interfere. To the late Mr John Woodger, of Newcastle-on-Tyne, is given the honour of originating the kipper method as applied to the preparing of the herring, and by establishing a new industry to increase the demand for, and extend the appreciation of, the public for the homely herring in yet another form.

Students of economic laws cannot but be struck with the manner in which demand is created when the supply is forthcoming.

The growth of the herring trade in the middle of the nineteenth century would have been impossible without the assistance of the kipper curer, and in like manner, when it would appear that supplies were overtaking the demand, the

Continental business developed to such an extent that at the commencement of the twentieth century, whatever the supplies might be, there was always a demand to keep the figures remunerative to the fishermen and boats.

Some Enemies of the Herring.

A word may given to the consideration of the enemies of the herring; in view of the enormous quantities we have mentioned as being caught in one year, it might be thought that man was the most destructive agency at work, but this is not so, it having been proved that the number directly used for the food of man does not approach 5 per cent. of the available total.

The cod-fish, for instance, can easily dispose of half a dozen herrings at a meal, and whenever herring is obtainable he does not wish for anything else. At the great cod-fishery off the Lofoden Islands, the cod approach the shore in what are termed "cod mountains," solid shoals nearly two hundred feet in thickness, which keep arriving for two months. A distance of a yard all ways from fish to fish would give an available total to a square mile of 120,000,000 cod-fish, and this in one shoal only! Giving to each cod-fish its daily allowance of herring, how many days would it take for that one shoal to consume all the herring which man catches in a year?

In addition the herring is a staple of diet to almost every fish that swims, from whales and porpoises to dog-fish and mackerel, all, like the late Duke of Argyle, preferring herring, when they can get it, to any other food, whilst the sea-gulls, guillemots, and every other sea-bird, takes his toll for self, wife, and family, whenever occasion offers; in fact, the herring is the one great bank upon which all can, and do, draw, and the shoals of them the never-failing storehouse which always avails, and man, clever, designing man, is the foe least feared of all.

As an illustration of this the fishing in Loch Hourn, in the Isle of Skye, may be mentioned. It is a long, narrow inlet, an opening cleft in the mountains of the island, and the fish were never seen until within the head waters of the loch, appearing as if by magic, and staying there the full time, prompted by their instinct, their continuous coming unaffected by the preparations made, and the result of them, in catching vast numbers year after year. Presumably, the same school made the loch head their gathering place, to which mustered the old brood and the yearlings, each following each in a royal succession, through the centuries, man meanwhile doing his best—and worst—and all the host of enemies levying tribute, but without depleting the parent stock beyond the powers of reproduction to maintain the school as numerous as ever.

Name, Clupea Harengus.

The Latin generic name of the herring, *Clupea*, signifies something to do with a shield, but how or why it was bestowed upon the herring and its allied fish, the pilchard and sprat, it is difficult to say, unless in the formation of the scale of the fish the naturalist saw some resemblance to a shield. Many of the commoner kinds, pilchard, anchovy, shad, were known to the Ancients of history, as we gather from the early Greek and Latin writers, but of the herring no reference is found, presumably because around the Mediterranean Sea, which civilisation circumscribed with its habitations, the herring is unknown.

The Japanese have a proverb that the eye of a herring if looked at with sympathy and understanding is a vision of beauty, to which we subscribe, but go further, and say that the homely herring, if looked at aright, conjures up all that is noblest in the hardihood and heroism of man, and all that is greatest in sea-power and world history.

"Men of war and merchantmen consume men and breed none, the collier brings up now and then an apprentice, but the only and common nursery of seamen is this fishery."

Thus whilst we acclaim the powers of our fleet let it be remembered that in the herring we have the symbol and the secret of its potency and greatness.

CHAPTER VIII

THE COD-FISH

Eleven Millions! That is the startling figure which the counting and computing of the ova of one female fish, weighing 21 lbs., gave to the investigator who was none other than the world-renowned Frank Buckland.

"Counted and computed," there is no other way of dealing with the problem of the infinitesimal, such as is presented by the subject before us—that is, to count the numbers in a given weight, and then to weigh the bulk; more necessary, also, in this case, for large as the full grown cod may become, as an egg it is one of the smallest in the sea.

Nor is its first acquaintance with actual life any more imposing, for when it has absorbed the yolk-sac, which is its earliest nourishment, and acquired a mouth wherewith to fend for itself, it is then but one-fifth of an inch in length, and when with deliberate and thoughtful movement it has sought out its prey, and grown thereby, until the fins, above and below, have acquired the rudiments of coming form, it is but an inch in length, a size which has to be increased by another quarter-inch or so before fins and tail and shape of head assume the exact miniature of its coming greatness.

The Norwegian Fishery.

Eleven millions—and then we can credit the Norwegian fishermen's hyperbole and figure, "A Mountain of Cod," mountains which have arisen—we use the word meaningly—from out the great deep, years out of mind, and through centuries of which there is no record.

For over a thousand years there is knowledge of the coming of the cod from January to April from the depths of the deep depression in the north North Sea towards the Norway coast and the Lofoten Islands, which deep depression probably marks a chasm that existed in the land before the floor of the northern seas sank to its present level, and which chasm is to the fish life of the northern ocean what the Atlantic valley beyond the hundred-fathom line is to the western fisheries, the place of resort from the terrors of man and of rest after the toils of Nature.

Its Consistently Unvaried Character.

Without a break through the years the Lofoten fisheries have yielded their twenty to thirty million fish per year, and the conclusion, arrived at years since, was, not that the species was being over-fished, but rather that greater fishing was required to reduce the numbers, the quality of the fish tending to poorness, apparently from want of food, such poverty proving itself in 1882 to the extent of needing more than double the quantity of fish livers, 900 instead of 400, to make a barrel of oil, and four of such barrels, when refined, to make one barrel of medicinal cod-liver oil in place of the usual two.

Towards 1897, however, a high-water mark was reached, to be followed by a decline without parallel, whilst, as compensation, the cod fisheries on other parts of the coast had increased so that an average of fifty millions of fish—ten millions more than was landed in England and Scotland in 1913—is still maintained.

The conditions in Norway are used here as giving an illustration of some of the problems which the fish presents to the investigator, and pointing the way to much that would take long study and research to determine and understand if only isolated, or smaller sections, of the industry were considered.

Universality of the Fish in Northern Seas.

But the cod-fish does not confine itself to the Norwegian seas, as is well known, nor does it appear to flourish there in greater numbers than off Newfoundland, where, to drop a leaded line is to feel it bump, bump, bump, as it encounters successive fish before reaching the bottom of the sea.

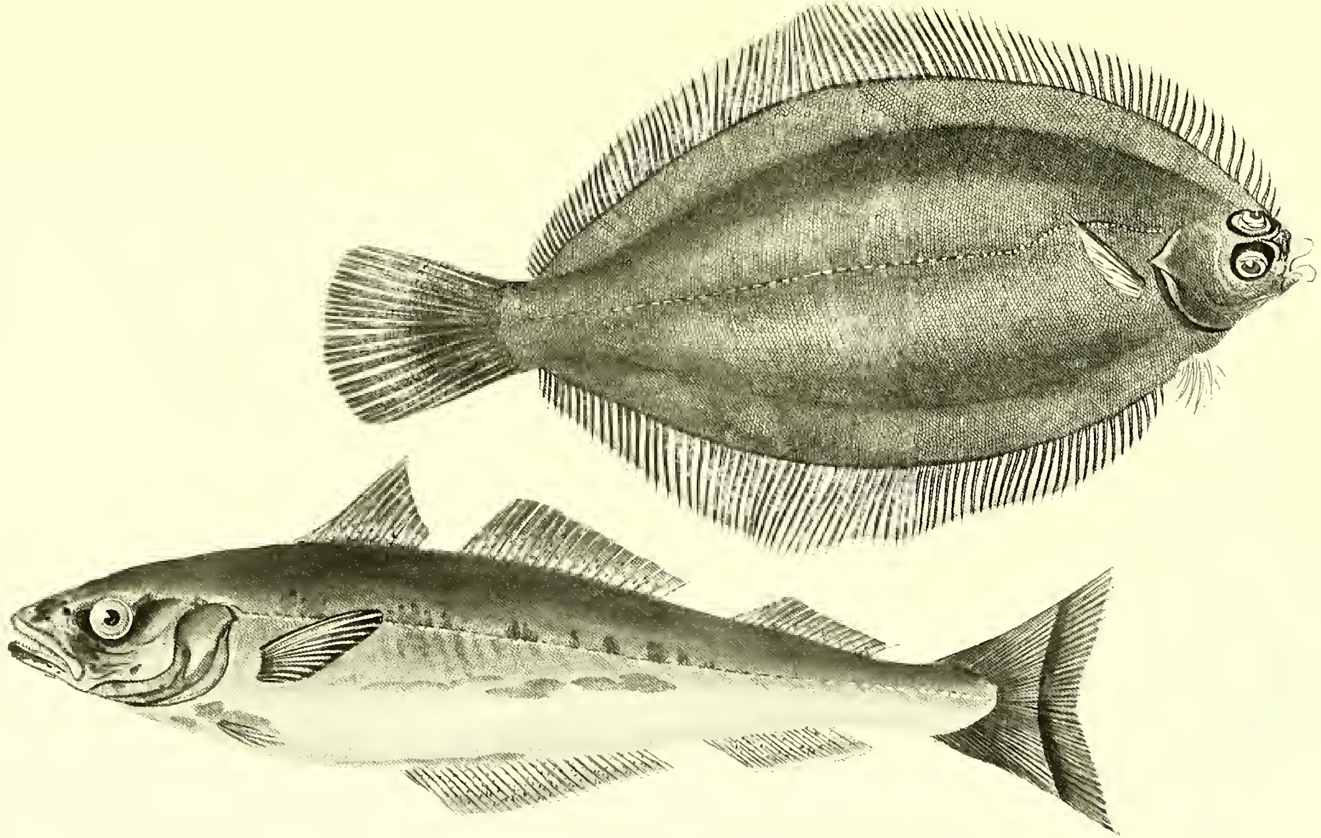
The Methods of Catching.

Thus it is that from June to October the fishermen use all the devices known to them for capturing the fish without diminishing the stock. They use the long line, with its thousands of baited hooks, the smaller hand-line, and the cod-seine, a net six to seven hundred feet in length and up to one hundred feet in width, but narrowing towards the ends. The caplin, or capelin (American smelt), is the fish that is used as the irresistible bait by the fishermen. It swarms to all parts of the coast for spawning, and excites the cod-fish when it is needing a change of diet for the development of its body.

As with other seine nets this one is drawn around the fish in a circle, and the drawing up of the net may enclose anything up to forty to fifty tons of fish. The fixed cod-net also is used, but in lesser proportion; as with all other fishing not any one method is uniformly successful than is any one bait in our small personal experiences. To adapt the means to an end, and to use the means which the conditions justify, is the only sure method in fishing to give successful results.

The Gill-net.

The Norwegian method illustrates this subject. At one of the great cod fisheries of Norway, that of Finmarkers, the most northerly as it is the most inhospitable spot of Norwegian territory, the caplin comes in shore to spawn on both sides of the North Cape, from April to June, and here also the little fish is used as the bait; but at the Lofoten Islands, already written of, a gill-net is used as the most successful agency of capture, for the fish are intent upon spawning and not upon feeding. This gill-net is of the seine description, with the meshes over three inches in



LEMON SOLE.
COAL FISH OR SAITHE.

measurement—the Canadian law made five inches extension as the limit—and this is sunk and buoyed in such manner as to stand upright, but in diagonal form across the trackway of the shoals which are seeking shorewards.

The diagonal position is taken so that, should the fish be coming through the water at an unknown level, they may yet meet the net at that height. There are further reasons for the using of the gill-net; the fish are not hungry as are the bait-caught fish, therefore they are in their prime, and two hundred of them will be equal in value to more than three hundred, whilst the livers will yield far more liberally of oil—a sub-industry, which, together with the roes of the fish, is of as much importance as the fish itself.

Fishing from Iceland to the Canaries.

Through all the seas of the Northern Hemisphere the fish is found from Iceland down to the Canary Islands the southern limit of its existence, the latter fishing one in which the Spanish are concerned, the last remnant, as it may well have been the beginning, of her remarkable sea expansion. A few years since some three to four hundred boats were employed, whilst the fish were dried upon the coast of Morocco.

In Iceland England had a flourishing fishery as early as 1400, proving that Henry IV. had for his subjects as adventurous a race as King George can claim for his; evidence, too, that the race is not decadent, however much it may please and flatter the modern self-styled apostles of "culture" to think that it is, and whilst the Dutch, in 1368, were seeking permission of the King of Sweden to fish for cod and herring off, and to erect an establishment upon, the island of Schoonen in the Baltic, Englishmen had already penetrated unto the farther north-west.

The Cod Fishery, as the Beginning of the American Settlement.

From the Iceland cod-banks to Newfoundland and the shores of New England, the great centres of the cod-fish industry in the western seas, was not a far cry, nor was a particularly adventurous spirit needed to reach them, and thus we find that the first American colonies owed their permanence chiefly to the abundance of fish at hand.

Captain John Smith, the founder of Jamestown, in 1609, was also an ardent deep sea fisherman, his vessel, in 1614, taking 47,000 cod-fish off the coast of Maine! and that he loved his work is shown in one of his writings when he says, "And is it not pretty sport to haul up twopence, sixpence, and twelvepence as fast as you can hale and veare—to pull tight and to slacken—a line? He is a very bad fisher who cannot kill in one day with his hooke and line one, two, or three hundred cods."

A Reason for the Puritan Migration.

The prolific nature of this fishing had its effect, too, on the Puritan emigration. "What profit will arise?" asked King James of their agents from Leyden who sought permission and consent for them to go to America. "Fishing" was the one word of reply, and the fishing ports of the coast-line are known now by names familiar to us in the business at home — Dover, Yarmouth, Harwich, and such like.

In 1578 Newfoundland had its complement of fifty English cod-fishing vessels, by which it would appear that the genius of the race at that time had rather preferred the arduous pursuit of the fish afar than the exploiting of the seas at home, which work, as we have seen, was largely taken up by the Dutchmen with their busses.

The early fisherman had also to be a manufacturer; his raw material had to be taken on shore and dried after splitting and salting, a work which flourishes to this day in Canada, as is shown by the photographs in our second volume, pp. 20, 106, and 128, having extended from its home along the Newfoundland and New England coast into Nova Scotian territory.

The Preparation of the Dried Cod.

The splitting of the fish is not dissimilar from the method of the fishmonger at home, except that the bone has to be taken out, both operations being described by an enthusiastic native as being done with one movement of the knife! More sensational, we fear, than true.

Contrary to what might he imagined, uninterrupted warmth and sunshine are not necessary for a successful drying. This is obtained by alternate spreading out and heaping of the fish, the latter as important as the former, but which is only done when showery weather threatens, when they are placed in stacks, the skin sides uppermost, to prevent soakage, the rain being harmless unless persistent and continuous.

Without this heaping the fish would not "bloom," as the peculiar appearance upon the best fish is described, after which "blooming" the fish is ready for marketing and export.

The amount of shrinkage which the fish undergoes may be gathered from the fact that one pound weight of dried cod is equal to two pounds and three-quarters of fresh cod, and if so it be that the cod was in the best condition before drying, it is evident that a great saving would be effected were it used at home in England more than it is, reduced to terms of figures, fresh cod is worth say, 6d. per lb., therefore 2¾ lbs. would cost 1s. 4½d., but the equivalent in dried cod would be a pound for 4½d.! a saving of 1s. on the purchase; but the demand remains as ever from the continental countries, Canada and Newfoundland exporting to Spain, Portugal, Italy, as well as to the Brazils and the West Indies.

Its Development in England.

Of recent years this business has developed in England in consequence of the extension of the trawler fishing on to the Iceland banks. The fish are brought to Aberdeen and Grimsby in the fresh state, and cured in the vicinity of the markets there. Such curing makes it possible to bring in large shots of cod, as shown in the photograph of the Henderson Jetty at Grimsby, vol. i., p. 140; the later and finest specimens of the trawler carry an oil-making or extracting plant on board, as well as a fish-meal factory, to deal with the offals as they arise.

Dried and Salted.

There are two methods of drying, the one in which the fish is split, boned, and salted, and the other in which the fish, after boning and splitting, is dried in the air, the treatment in both cases being similar, except for the salt, the latter, the air-dried, being known as stock-fish, from the Danish and Dutch *stok*, a stick, the fish being comparable to that after the process of drying and stacking. Incidentally, it may be recalled that the stock-fishmongers who were such a power in the city of London, but were afterwards absorbed by the Fishmongers' Company, took their name primarily from dealing in the cod, ling, and other fish, which were dried without salt.

It would be interesting to compare an analysis of the two fish, the dried and salted, from a nutrient point of view. We give each couple of figures respectively: water, 18·60, 47·03; nitrogenous matter, 77·90, 31·39; fat, 0·36, 0·38; ash, 1·52, 21·32—the latter having more of water by 28·43 and of ash 19·80, but of this ash practically the whole is composed of chloride of sodium, or salt, whilst of nitrogenous matter the dried, or stock-fish, has an excess of 46·51, or about 150 per cent. more; obviously, therefore, the stock-fish, for the customer, if at anything approaching equal prices, is the more economical purchase.

As an assistance to the fishmonger in the development of this part of his business we shall give in our fish cookery section a series of recipes from continental sources as to the methods of cooking and making more than palatable this useful product of the sea and the enterprise of the fishermen.

We will now return to the phase of the cod-fish industry, which is nearer home, and with which our trade is more intimately concerned.

Need of Rest for the Fishings.

The Dogger Bank is approximately 200 miles long and 30 miles broad, and it is obvious that whatever may be said of the inexhaustible character of the Norwegian and Canadian fisheries, such cannot be claimed for the Dogger and the other cod banks from which our immediate supplies are drawn. What is nearer the truth is, that the fish no sooner appear on these known beds than they are swept away by the wide-opening mouth of the otter-trawl net, and the only cessation of, and rest from, its scourings is when the heaving of it proves consistently unprofitable.

It is not our business to suggest the remedies for this and other wrongs, but one cannot help thinking that a close time, or a resting time, should be given to such banks, or districts, as experience tells to be periodically most in want of it.

The temporary rest following upon the great coal strike of a few years ago produced a marked difference in the after fishings, and, doubtless, some measure of compulsion would work a similar good. Not that it can be argued that the quantities brought to land are other than satisfactory from the point of view of bulk, the Fishery Board for Scotland's record being in

1913, 1,233,449 cwts., value £583,451
and 1912, 1,231,855 ,, ,, £660,790
as against 1903, 525,060 ,, ,, £233,132

The growth in the latter years is attributed, as the Records for 1913 tells, to the fact that about 40 per cent. of the total catch was from the Iceland and Faroes fishing grounds, and as illustrating a point of specialisation, which always holds good in the catching business, three-quarters of the 40 per cent. were landed by foreign fishing vessels.

The quantities of cod-fish landed, all ports, in England and Wales were:—

In 1913, 2,646,666 cwts., value £1,700,931
1912, 2,486,762 „ „ £1,448,692

an increase in both quantity and value per hundredweight. Here, again, some 40 per cent. is due to landings from Icelandic waters.

Experience tells us that of all the fishes handled for food, the cod-fish has remained most stable, and liable to less fluctuations of price, conditions which are only to be expected from a perusal of a life history of the fish; but that same experience tells us that a less proportion of fish is coming from our own home fishing grounds than formerly — points these that suggest the need of some responsible control of fishing operations in the interests of the fish, the fishermen, and the public.

The Investigations of Sars.

The Norwegian naturalist, Sars, to whom we owe so much of the beginnings of knowledge concerning the life history of the sea fishes, after finding that the eggs of the cod-fish floated and did not sink, as had always been imagined, set himself to unravel the circumstances attending the growth of the fish, and for all practical purposes his conclusions are our guide to this day.

The First Year of Life.

At the Lofoten Islands the spawning is chiefly in March and April. By 7th May 1866 he found that large numbers of the fry were already hatched; in a fortnight's time the transparent fry, about one-third of an inch in length, were to be seen at the surface of the water, a broad head with two prominent eyes and a vibrating thread for a body—a contrast this to the fish which Pennant records as being 5 feet 8 inches long and weighing 78 lbs. By the middle of June they were nearly an inch in length, with the barbel below the chin just showing, but in other respects passing from the larval stage into the mature. Early in July they had acquired the habit, in the open sea, of sheltering beneath the large jelly fishes, eating the crustacean parasites which fastened themselves to their protectors, the length of the longest being one and a half inches, approximately half an inch of growth per month.

In another month's time with half an inch of added length they were found swimming in shoals, in the currents where weeds, jelly-fish, and *débris* collect, the fins, barbel, and scales well developed, thus at two inches transformation was complete, and the perfected fish was in existence.

From these shoal currents the fish passed in - shore to the sea-weeds, and perhaps the shelter of the rocks, where the food which they affected on rock and weed and in the sands might be found, and by December attained the length of six to eight inches, having made a more rapid growth, as they were able to find worms and fish as food.

The History of the Second Year onwards.

The following summer they still remained as in - shore fish, having increased to 12 inches, but towards autumn they disappeared into deeper water to find the food which was more in accordance with their needs. From thence until they are three years old their growth may be taken as equivalent to an inch a month, so that when breeding commences, approximately at three years, they are 3 feet in length, and this is borne out by independent enquiry, and by research amongst the North Sea cod, it being found that none were immature at a length of over 35 inches, whilst the appearances of egg growth were traced in some of 22, thus from two to three years may be taken as the time when the fish, male and female, first come to maturity, and three years from the spring of their hatching out as the time of spawning.

The Omnivorous Cod.

Perhaps hardly any other fish is as omnivorous as the cod. A list of the "foreign" articles found within him from time to time would include, amongst digestible things, a candle, a white turnip, a black guillemot in full feather, and a partridge, whilst amongst the indigestibles, a ring of keys (dropped overboard by the skipper many miles from the place of capture), a jack-knife, and in 1626, so it is recorded, a book with three treatises in it was recovered from a fish that had been brought to the Vice-Chancellor of Cambridge. It is to be hoped that this does not synchronise with a date when the University looked askance at the revival of learning, and must needs have it brought to them from the mouth of a cod. Every fishmonger has some experiences of his own to relate in this connection, from the sole more "live" than the cod which contained him, to the empty purse that had aroused the hunger instincts of the fish—these amongst the extraordinary articles of diet, whilst the ordinary fishes, and other life to be found in the sea, upon which it feeds, are only limited by the capacity of its jaws and stomach, anything which proves entirely unsatisfactory, such as stones from which the parasitic growth has been absorbed and digested, being ejected.

Its Uses to Man and Animals.

In proportion as its food is varied so it would appear that it itself is used as a food in a variety of ways, nothing being lost, from the air-bladder, salted to be used as the commercial "sounds," or the making of isinglass; oil from the liver, food for Kamchatkans' dogs from the bones, and fuel for the Arctic dwellers' fires, the head as part of the food for increasing the flow of milk in the cow, and its flesh to feed, in a greater or lesser degree, all the peoples of the earth.

The "Live" Cod.

The "live" or crimping cod of twenty years ago—the survival and outcome of the line fishing in the North Sea ere the railways had come with their possibility of speedy carriage, and when getting the fish to market in good condition meant well-smacks through which the tide flowed, and well-depôts at Grimsby and Gravesend in which to retain the fish alive until the market required them—are almost a thing of the past. Some criticism has been levelled at the practice from the humanitarian point of view, but the fish was as dead as mutton before the fishmonger cleaned it and performed the slicing operations upon the body, and the "star performances" with the knife upon the cheeks and head, which, after it was cooked, gave the fish a more presentable appearance than is possible when it comes now to the table flabby and sloppy.

Crimping.

The nervous system of the fish remains in operation for a time after death, and the scoring of the flesh with a knife and putting it into running water sets up a reaction which "firms" the flesh and hardens its texture, whilst, after boiling, the flakes should separate more easily with a creamy substance, as a layer, in between them.

For some persons the fish is not only more palatable in this condition but more easily assimilated, but except in those rare cases where a small fish is caught upon a shore hook locally, it is becoming next to impossible to purchase the fish, a distinct contrast to the days of thirty years ago, when Gilson, and Grove, of Bond Street, and Grove of Charing Cross would make their display of fish, at times, composed of nothing else but crimped cod and salmon, the former in the morning after market, and the latter in the afternoon.

It is true that the "live" fish still come to market, but in such small quantities as to be almost negligible, whilst the men who understood the art, artists with the knife indeed, have mostly passed on. But at this date no record of the fish, from a trade point of view, would be complete that did not include a passing remembrance both of the crimped fish and the old-time fishmonger, whose pride in his task is a heritage of personal knowledge the writer would not willingly forego.

An Old Writer upon Fish as Food.

Before leaving the edible side of the fish it may be of interest to recall the description of it as given by T. Venner, 1650, in his *Via Recta and Vitam Longum*:—

> "Cod-fish for whiteness of colour and moderate hardness and friability of substance is commended. It is easily digested and yieldeth strong nourishment. Being salted, dried, and so kept, it becomes of harder concoction and worse nourishment."

Seeing the extent of the knowledge of his day, and some of his far-fetched conclusions upon other matters, it would not appear that he was far out in his estimate.

Considering the ubiquitous character of the cod-fish and its influence, great and lasting, upon national life, it would be strange if it had not attained to some degree, and place, of honour amongst the peoples it has done so much to assist and benefit.

Iceland, of which Hakluyt wrote, "to write is little nede, save of stock-fish," has a dried cod crowned for her arms, which quartering or arms is borne by the kings of Denmark, whilst above the Speaker's chair in the State House of Massachusetts there hung a model of a cod-fish as representing what was then the most important industry of the State, the State House of which, at the bidding of one of its stalwarts, went on discussing the terms of the Ale-wife (an American herring) Fisheries Bill, when all were quaking with fear that the end of the world had come; whilst Couch relates that a copper coin exists of the Magdalen Islands which bears on one side a seal and upon the reverse a cod-fish headed and split open.

In closing this sketch of the cod-fish, as one of our most important fish, we cannot do better than quote the words of an unknown poet, presumably a courtier of Elizabeth:—

"She that in wisdom never was so frail
To change the cod's head for the salmon's tail."

And if in our sketch of food fishes we have given priority to the cod as against the salmon, rightly esteeming its value and usefulness as the greater, we have but followed in the wake of England's famous Queen.

CHAPTER IX

THE PLAICE

The Value of the English Fisheries.

Of the total value of the fisheries of England in 1913, including shell-fish, £10,336,689, the value of the plaice is returned at £1,011,374, whilst taken by weight, all England and Wales furnished 16,152,374 cwts. of fresh fish, of which 699,298 cwts. were composed of plaice—a gross amount that, large as it may appear, fell behind the catch of 1912 by 135,000 cwts.

Glancing at the average price realised one is surprised to learn that the difference between 1906 and 1913 is given as only 1s. 10d. per cwt., £1, 4s. 6d. and £1, 6s. 4d. respectively; but looking at the "medium" and "small," the fishmonger finds the figures recorded below to be more in accord with his experience. Taken together, the average price of both in the first year was 17s. 2½d., in the latter £1, 5s. 6d. per cwt.—landing values, an increase of nearly 50 per cent.!

Whilst considering figures the writer has prepared a list showing the principal ports from which plaice is obtainable, and the quantities landed there throughout the years 1912 and 1913.

The Catch of Plaice for 1912 and 1913 prepared from the Government Returns.

	1912 Cwts.	1913 Cwts.		1912 Cwts.	1913 Cwts.
North Sunderland	228	144	Bridlington	324	453
Blythe	8,410	2,883	Hull	191,587	124,684
North Shields	5,563	4,653	Grimsby	330,580	299,332
Sunderland	254	316	Boston	22,657	22,680
Hartlepool	2,593	2,214	Yarmouth	2,162	1,385
Scarborough	2,050	2,510	Lowestoft	121,799	11,987

	1912 Cwts.	1913 Cwts.		1912 Cwts.	1913 Cwts.
Harwich	162	138	Swansea	480	276
Brightlingsea	229	290	Tenby	541	414
Burnham	167	271	Neyland	516	374
London, Billingsgate	54,828	41,468	Milford	2,969	2,155
East Swale	245	265	Pwllheli	924	705
Margate	55	266	Carnarvon	1,252	1,313
Ramsgate	24,633	25,048	Hoylake	2,920	4,859
Dover	394	265	Birkenhead	2,220	3,845
Folkestone	5,553	5,565	Liverpool	3,137	2,852
Rye	769	622	Southport	821	874
Hastings	8,389	5,991	Lytham	347	997
Newhaven	1,438	1,600	Fleetwood	14,017	11,140
Brighton	1,885	908	Lune	461	358
Portsmouth	692	447	Morecambe	653	659
Poole	559	615	Barrow	245	226
Exmouth	191	338	Whitehaven	817	289
Torquay	451	268	Peel	760	242
Brixham	4,266	2,693	Ramsay	444	576
Plymouth	1,176	778	Douglas	1,108	1,179
Padstow	736	497			

The distinguishing feature, with but a few exceptions, is a general decline all round the coast, London showing a drop of 25 per cent., and Hull of over one-third; Lowestoft, amongst the big ports, the most nearly holding its own, although it should be pointed out that 54,000 cwts. of Hull's decline is attributable to the comparative failure of the Barents Sea (White Sea region) fishing, which from 289,000 cwts. in 1908 fell to 57,000 in 1913, and the average quantity brought by each boat per voyage from 1,250 cwts. to 530 cwts. respectively.

The Figures for Scotland.

In keeping with this decline in the English coast fisheries for plaice the records of the Fishery Board for Scotland give:—

46,160 cwts., valued at £71,601 for 1913,
as against 50,238 „ „ £69,697 „ 1912,
and 55,772 „ „ £72,916 „ 1911.

Here we have the continuous decline in quantity with the well-known contrary inclining movement in prices—a difference of nearly 10,000 cwts. in three years, and yet the value is only £1,300 less! With figures such as these the fishmonger need no longer wonder that prices—and profits—are against him.

It is satisfactory, however, to find that the proportion of small plaice landed has decreased, it being given for 1911 as 25·5 per cent.; in 1912 as 24·6, and in 1913 as 22·7. Aberdeen presumably has its own especial way of whittling down the wasteful "smalls."

Government Action Foreshadowed.

With these conditions obtaining one understands how it is that the authorities show not a little concern, and have concentrated their attention, and that of the International Council, upon the problems presented to them.

Indeed, conclusions have already been arrived at by the Council, and adopted by them in September 1913, in favour of a size-limit, below which plaice may not be marketed, and these conclusions are now being considered by the Governments, whose representatives compose the Council, with a view to concurrent and concerted actions.

It is obvious that if improvement is to be effected it can only be reached by common action between the countries whose domains border on the North Sea, which is the common fishing ground of all, otherwise, as was said by a Netherlands scientist thirty years ago, "If we save the life of the young herring when it is in our waters, what is to hinder it swimming away and being caught by an English fisherman?"—with which statement of the case none can disagree.

The Need of Control of the Fisheries.

Amongst all the food fishes, pelagic and demersal—surface swimmers or ground feeders—there is not one for whose care and protection more energy should be put forth than for the plaice, whose life would seem to be lived entirely within a reasonable distance of the nursery or rearing ground, a distinct contrast to the herring and many another fish, which is posted up as "missing" through certain periods of the year; and because this homing-nature is the characteristic of the plaice, it follows that the interests of the fishmonger should be aroused in whatever concerns the fish, and in any protective measures that may be evolved.

Experiments on Marked Plaice, their Travelling Powers.

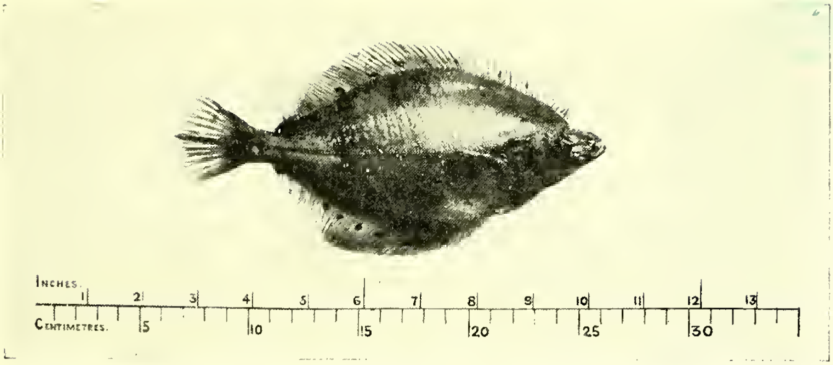
As bearing upon this phase of the subject and emphasising its importance, it is found that, with two or three isolated exceptions, and those being large mature fish, the marked plaice liberated in the North Sea during the five years 1904-1908—those which were recaptured, that is—were taken within the waters of the North Sea; the afore-mentioned exceptions having travelled from the central areas of the North Sea to the western part of the English Channel, with three or four only taken off the nearer Kent and Sussex coast, whilst, in similar fashion, the fish liberated off the southern coast were all recaptured in the English Channel—proof positive this that the plaice lives its life in a comparatively limited area, and one in which it is possible, therefore, to bring remedial pressures to bear.

The Growth of Marked Plaice.

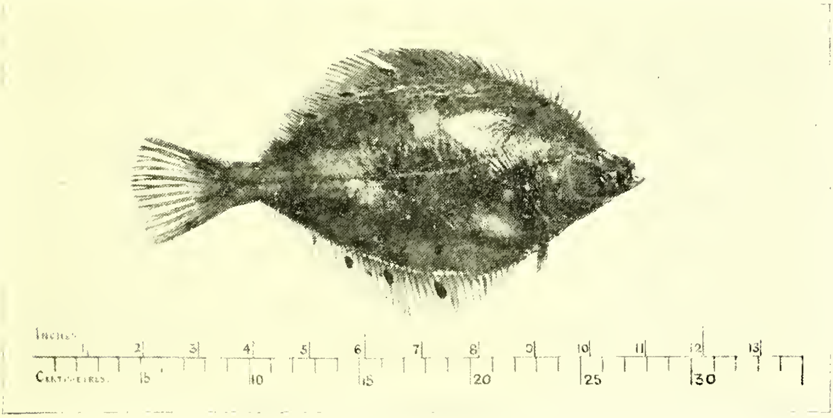
Interesting, also, in this connection is the growth of plaice when transplanted from the in-shore nursery and feeding grounds to the Dogger Bank, it being shown that the average growth in one year is 5⅝ inches, with an increase of weight from 2½ ounces to 15 ounces, whilst the same fish left in-shore on Coastal Grounds would have grown 1⅝ inches in length only, and added less than 2 ounces to its weight. The difference of three successive years of growth is clearly shown in the illustration facing this page.

Causes of Migration.

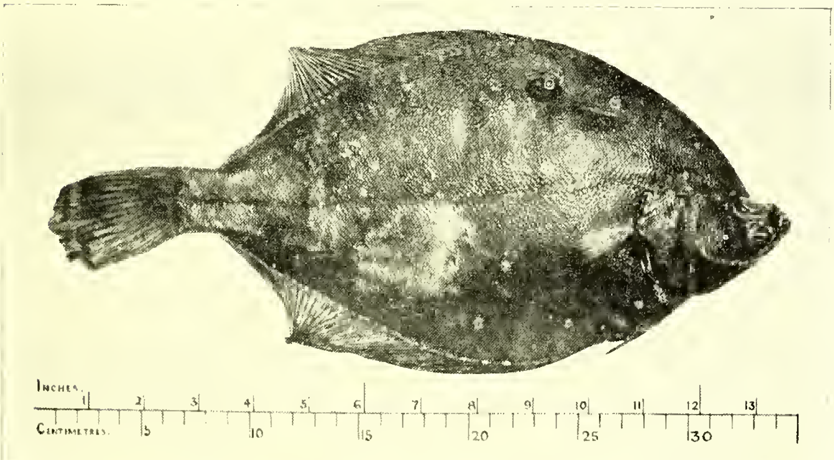
That the migrations of the plaice take place in search of food is evident, especially in the early months of the year, and because the Dogger Bank proved itself a prolific source of the particular molluscs that form the bulk of the food of the plaice, and by feeding upon which it chiefly lives



PLAICE CAPTURED IN-SHORE IN APRIL, MEASURING $7\frac{3}{4}$ INCHES, AND WEIGHING $2\frac{1}{2}$ OUNCES.



THE SAME FISH, RESTORED TO COASTAL GROUNDS, MEASURED IN NOVEMBER $9\frac{1}{8}$ INCHES, AND WEIGHED $4\frac{1}{5}$ OUNCES.



BUT A SIMILAR FISH, TRANSFERRED TO THE DOGGER BANK FOR THE SAME PERIOD, INCREASED TO $13\frac{7}{8}$ INCHES, AND WEIGHED 15 OUNCES.

[By permission of the Board of Agriculture and Fisheries.

PLATES SHOWING SEVEN MONTHS' GROWTH OF PLAICE ON COASTAL GROUNDS AND THE DOGGER BANK RESPECTIVELY.

and thrives, it must, therefore, be concluded that the wealth of the plaice upon the Dogger Bank in bygone days is to be attributed to these facts—wealth, which led one writer of thirty years ago to deplore that "whilst plaice always used to be bought for not more than 2d. or 2½d. per lb., the ordinary price, now 4d., is nearly always asked!"

An Occasional Price in the Early Eighteenth Century.

Yarrell, in his first edition 1836, records that "the plaice is sometimes taken in incredible numbers, and that so great a glut occurred once in Billingsgate Market that, although it was crowded with dealers, hundreds of bushels remained unsold. Great quantities averaging 3 lbs. in weight were sold at one penny per dozen. One salesman, having in vain endeavoured to sell a hundred bushels at the rate of fifty plaice for 4d., left them with the clerk of the market, Mr Goldham by name, requesting him to sell them for anything he could get. Unable to dispose of them otherwise, Mr Goldham, by direction of the Lord Mayor, divided them among the poor"—a feast for the poor which we can, with certainty, prophesy will never come again in the time of any future Lord Mayor.

Commercial Transplantation of the Plaice.

As to the commercial possibilities of transplanting plaice from the nurseries to the depleted Dogger Bank, it must be left to experts to decide; there are elaborate statistics in existence on the subject. On the results of their experiments, as tabulated by the Marine Biological Association, one would judge the work to be such as is eminently fitted for an exemplification of the assistance which the Board of Fisheries could render to the State whose interests it serves.

Unlike the herring, the plaice must grow until its fifth or sixth year before it is ready for its work of carrying on the species, an age when the female fish of the North Sea is from 13 inches to 15½ inches in length—a great age-handicap this as compared with a fish which begins to spawn at or just after its first year of life, greater still when at no period of that important five years is it possible for it to withdraw beyond the reach of beam or otter trawl in all the wide North Sea.

Natural History of the Flat Fishes.

The flat fishes are known as right hand, or left hand, determined by the position of the head when the fish is laid down, coloured side uppermost, with its ventral fins towards or at the front.

The life history of all the flat fish is the same. They begin life in an upright position with an eye on each side of the head; they start out intending to swim uprightly, and for a while succeed, but the baser, and lower, instincts prevail, they descend to the bottom of the waters in search of other food, and the metamorphosis begins.

And of the Plaice.

Buoyant at or near the surface of the waters the tiny egg of the plaice, albeit amongst the largest of floating fish eggs, and approximately one-twelfth of an inch in diameter, less rather than more, is, like the herring, without an oil globule, its floating properties being derived through being of less density than the salt water in which it is deposited during the period of winter, and is therefore slow in development. Transferred to a temperature of 53° Fahrenheit the eggs have hatched out within twelve days, but at winter temperatures from four to five or even six weeks would be necessary.

The Larval Growth.

The larvæ upon making its first acquaintance with the outside world, is about one-fifth of an inch in length, mouthless but not foodless, for the yolk-sac, which occupies the position beneath the stomach, is its store-house, whose gradual and final disappearance is marked by the coming and development of the mouth, after which the tiny morsel,

—it is then less than three-fifths of an inch long—must snap for its food like its elder fellows. The fish is then in process of transformation from the larval stage, its fin-rays and tail in rudimentary form, but its skeleton, generally, fairly well defined.

At the length of an inch, when it is probably four to five months old, its resemblance is such as to be recognised for the plaice that it is, although until then it is almost impossible to differentiate between dab, flounder, or plaice.

As these fish of an inch in length have been taken at a depth of twenty to thirty fathoms, it is assumed that as the larval stage is passed, the fish, as we have stated, sink to the bottom, and afterwards make their way to the shallower depths and the shore, when the food is such as is fitting for them, but without a doubt the small fry are hatched, for the most part, in shallower waters.

The New Life or Transformation.

Somewhere between the one-fifth-inch and three-fifths-inch stage the fish undergo that transformation from upright to flat fish, which is their distinguishing feature, and at the same time, one eye being useless underneath them, it passes around to the other side.

Through the head or around the head? If the dorsal fin extends to the nose or the full length of the fish, then the eye is drawn under the skin until it appears in the position it is destined to occupy, but if the fin finishes behind the eye, then that organ would appear to be drawn around the surface of the skin, but not *through* the head, as was conjectured.

The head of the plaice has a wry look about it in common with its class, the result of this twisting of the eye ere the bones of the head are thoroughly formed and hardened; in some exceptional cases, which the trader will occasionally find, there is a malformation above the eye, the dorsal fin being notched under; in these fish, wryness assumes a fierce appearance, and the character of the change from an upright swimming fish to a flat floundering feeder is fully realised.

Coloration.

After the metamorphosis begins the coloration which is to be the fishes' protection, alike for defence and in offence, and is to characterise the floor of the sea from which they are taken, so much so, that, were a fisherman, knowing the various districts from Land's End to the Forelands, called on deck when the trawl was heaved in-board, he would be able to tell approximately the position of the boat, for with but few variations the fish from the Diamond, and all other grounds, retain their characteristics, or these are assumed as immigrating fish find food and shelter there.

From the brightness of these south-grounds plaice the colours vary, as the spots, until you come to the dull, heavy, leaden-like look of the Faroese and White Sea plaice.

The Plaice as an Edible Fish.

It is a matter of wonderment to many that the plaice should have become the favourite fish it has, for few amongst experts or connoisseurs have a good word to say for it; "tasteless," "watery," "the best part of it is the roe," are ordinary comments; the Kent men say it is not at its best until it has "tasted May water," meaning the time when the recovery from spawning brings about a harder condition, presumably the outcome of a voracious appetite during the skeleton state when the female is found in a condition approximating to "a bone and two sheets of paper," the *bête noire* of the fishmonger during the early months of the year.

The Scientific and the Practical Man.

The scientist is always declaiming that the only practical man is the scientist, and that the other type of practical man is of a pseudo description, and only a whole-hearted believer in himself, but this class of practical man would be prepared to enact a close time for plaice—so far as fishing over those grounds where wholly, or even mainly, plaice were to be found, are concerned—during January, February, and March, for not only are tons of spawn, on the point of shedding, brought to land, but also the spent fish, which are useless, being merely rags and bones, are brought ashore to wasteful purpose.

The Cooking of the Plaice.

As to the culinary and edible properties of the fish it is probable that the latter is largely owing to the former, and that the development of the filleting craze is answerable for the esteem in which it is held; it is quickly cooked; the "browning" from the frying can be adjusted by the various batters, crumbs, and fats, until the appearance is appetising and in accordance with the line, "Nature in him was almost lost in Art."

As to how far human nature can be deceived by outside show and glitter, let the thousands of fillets testify which have done duty at august banquets masquerading as sole; so true it is, one touch of sauce makes the whole flat-fish-world kin.

The Small Plaice Trade.

We do not forget the great part which the small plaice plays in the feeding of the poor of our cities, nor the service which the fried-fish businesses render that fry the small-fry, and in a cheap and appetising manner prepare a meal for the smallest possible unit of expenditure; to reconcile the claims of these to a nourishing food with a system or plan which seeks to save the future of the plaice race in our narrow seas as an inheritance for our children, is a task needing the collaboration of scientist and practical man, each giving to each his due meed of recognition, and seeking mutual guidance and assistance. In this manner we do not doubt that the good of all will be conserved, and the true interests of all achieved.

CHAPTER X

THE TURBOT

By common consent the turbot is allowed to be the best fish of the sea. *Faisan d'eau* (pheasant of the waters), say the French; pheasant of the sea, both English and Irish, seeing eye to eye in this matter, call it, with reference to its general qualities doubtless, for game the fish is not, and when it is, there are none so poor to do it reverence.

Its Goodness Known of Old.

This character of goodness is not an assumed one or acquired through recent centuries. The Romans valued it in Italy far above the rating we accord it, possibly because it was comparatively scarce, it being a relatively infrequent fish in the Adriatic.

Juvenal, whose *Satires* must be taken not quite literally—for, as with satires in general, they must lash the objectionable through the harmless media—has much to say about a secret sitting of the Senate, convoked by the Emperor Domitian, to decree the manner in which an especially fine turbot *presented* to him should be cooked, there not being a dish expansive enough extant in which to cook it whole—the enormous fish was wider than the broadest dish—and for this purpose Prometheus was bidden mould fresh clay to make a vessel correspondingly large.

At the banquet which followed, one of the courtiers is reported to have pointed to the strong fin bones, the dorsals probably, and remarked that they were a mighty omen of a great victory for the Roman Emperor, suggesting the idea of the Roman spears sticking in the backs of his foes. A figure capable of yet other and opposite meaning, but one to which both flattered Emperor and flattering courtier were pardonably blind. More true to facts, perhaps, the lines of Horace—

> "Great turbots, and the soup-dish, lead
> To shame at last, and want of bread,"

such being by no means an occasional result of the inordinate love of expensive fish by the Roman plutocrat.

The Name of the Fish.

Rhombus Maximus was the name conferred upon the fish by these earliest of admirers, for no other reason apparently than that the fish approached the rhomboidal in shape; as *Turbo* also, a whipping top or a spindle. Such special values as the fish was allowed to have were surely worthy of a name more clearly representative of its excellence, or the gustatory delight with which its admirers regarded it, but it was left for a more matter-of-fact age to take of the best bird of the land, and apply its name to denominate the finest fish of the sea.

The Dutch Fishers and the Turbot.

The history of the turbot in modern days is in part the history of the fishing abilities of the Dutch, who, very early in their maritime history, would seem to have proved the value of the fish, and learned the delight with which the Londoners regarded it, and promptly turned the knowledge into profit.

The sandbanks of the Flemish Bight were inhabited by the fish in the early days of the summer, where they could be taken by the primitive trawl-nets then in use; as later the fish advanced into deeper waters, they were followed up by these ardent fishermen, so that it happened for the greater part of the year a constant supply was being brought forward into the London market, a supply which was supposed to amount to a quarter of the whole that came to Billingsgate market.

It was supposed, says Yarrell, that £80,000 were annually taken by the Dutch for the supply of turbots to Billingsgate, but he must mean the value for all the various kinds of fish brought by them, as he mentions that in a recent year 87,958 fish were brought to London in the twelve months, and £1 for each turbot, or anything approaching it, would certainly be ridiculous; but that the quantity was undoubtedly considerable is certain, as many writers witness that the English buyers preferred the fish which the Dutch fishermen carried, probably because they were more careful to bring them in good condition. It was customary to pass a line through the mouth and gill of the fish, and hang it in an upright position in the water-well of the smack, for the double purpose of keeping it alive, and at the same time preventing the thorns or spikes on the back of the fish from bruising the remainder in the well.

The Turbot's Tenacity of Life

Flat fish are all tenacious of life, but the turbot is preeminently so; and so that the water is not particularly shallow or warm, it can be held alive in this state of semi-captivity during a long period.

The turbot ranks amongst the predaceous fish, the only limit to its demands being the opening of its mouth—sole, pout, pilchard, sea-bream, gurnet, sprats, sand-eels, anything and everything, and the brighter in appearance the better, as the fishermen know who try for it with hook and line.

Bait for the Turbot.

At the time of the Dutch importers, the smaller lamprey of the River Thames, caught in quantities off Mortlake, was accounted by them the best bait, and this it was that they took to sea with them as their ballast cargo, returning with the fish which the lamprey had attracted and the hook had snared.

The smelt and the gore-bill, equally attractive fish, were two other useful baits whose value had been well experimented with, and proved, as became the men who had to pay a £6 duty for each boat engaged in the business.

Whilst the Dutchman had for years taken our bait to bring us turbot in return, it is strange to hear that but a very few years ago there were fishermen so benighted, as to the value of the fish, as to use it only as bait for catching lobsters and other shell fish. That the two should go together, the turbot not being considered perfect except without the concomitant of the lobster sauce, is a fact which all understand, but that the greater should be employed to catch the less seems an inversion of ideas that is hard to grasp.

The Dover Fish.

The Frenchmen also brought their turbot into Dover, catching them with the long line over the well-known Varne Bank and the Ridge Bank, respectively 7 and 12 miles from Dover in the direction of Boulogne.

The turbot they could, and were allowed to land and sell at all times, but not any other fish, except when under stress of weather they had incurred damage to their boats, or wanted for food, in which cases enough could be sold to pay the expense of the re-fitting.

The Effects of Trawling in the Channel.

From these banks came the characteristic Dover fish already referred to, fish that were of the finest and the best that ever found their way to market, but which, during these later years, seem to have withdrawn themselves from the sphere of practical utility. Perhaps what one of the fishermen in a near-by bay recently said, "Once, in my time, there were nine boats sailing out of Folkestone, but now some three hundred families there get their living from the fish," could be looked upon as the cause of the decadence of the trade in this especial fish. That it was so gave him little of consolation; with the small outlook which is usual under the circumstances, and one that is quite excusable, the greater good was nothing to him whilst he was made to suffer loss, for the fact was undoubtable, the fish had ceased to come in-shore as formerly.

The Turbot from the West.

The next finest fish available for the Metropolis came from Devonshire, Mount's Bay, the Wolfs Rock, near Land's End, and the surrounding districts, and in pre-railway times those fish which Bath and Bristol—both important centres then, more so, perhaps, than now — could not take were sent by land carriage to London by post horses, the fish being carried pannier-wise at rates which certainly compared favourably with those obtaining now, although the travelling would probably take another twenty-four to thirty hours.

Doubtless the fish lacked the attention which it now receives from icing as soon as caught, but any want of care was made up for when it was once within the fishmonger's premises.

The Ice Wells of the Nineteenth Century.

The wells are not altogether a memory in some of the principal of the West End of London shops, where the pond ice from the parks and the country, when brought in by the barrow-men, was shot during the winter months, that there might be an ample supply for the summer's needs; this was previous to the coming of the natural ice from Norway, when all the year's wants had to be stored away in the preceding winter.

The turbot, with the other fish, was brought home, and it had not then to be made a show of to ensure a sale; it was placed amongst the ice, and there it was kept until sold, and if again it had to be sent into the country by one of the post-vans or carriers, it was carefully packed in ice before dispatch; its fitness and ripeness, if the term may be allowed, being as important and as well looked after as though it were a haunch of venison.

Fresh Fish.

One has always sympathy with the desire for fresh fish, but the word needs to be taken in a broad sense; the turbot, for instance, whilst very good when first caught, would be hard and tough and inclined to tastelessness, a quality which it does not by any means share alone.

It is, perhaps, somewhat strange to talk of pineapples and turbots in this connection in one sentence, but the truth remains that the one is no more satisfactory than the other; whilst they have but the quality of freshness, hard and fibry, they are forbidding to the connoisseur.

On the other hand, a turbot or a pineapple that is "ripe" is delicious, the trouble, of course, being to have kept, and cared, for the fish sufficiently long to have brought it to that degree of excellence.

As a sort of compromise in the matter, it is wise that turbots, especially if large—if wanted for a house, club, or any customer who does not appreciate a harsh eating fish—should be thrown into water for the day, for eight or ten hours say, before they are required for use; an experience which tallies with that of a very early writer, who says, "They are best being sodden."

Rightness and Ripeness.

As the border-line of rightness and ripeness is easily passed in the neck or haunch of venison, so it is with the turbot, and once passed, the fish is worse than useless.

Looking after the Turbot.

A point that should not be lost sight of is that the head should be kept well freed from slime inside; another, that when the fish is packed away in the ice-box its head shall hang downwards, and forwards, so that any draining may be in the way of emptying the blood-canal or duct that runs from the cavity of the body downwards towards the tail in the backbone; also, that the fish is best kept upright, and, if possible, with strong grease-proof paper surrounding it.

Clean iced water for soddening the fish that is sold is good, but ice-water that has drained from other fish is equally bad, especially when the turbot has to remain on hand an unknown time—until it is sold in fact.

A Prolific Fish.

The turbot can be looked upon as prolific, Frank Buckland recording a fish of 23 lbs. weight which had a roe weighing 5 lbs. 9 ozs., giving 14,311,200 eggs, whilst anything from five to ten millions in a medium-sized fish is common enough.

The egg, unlike the cod and haddock, is semi-buoyant, because of one globule of oil included in its structure, but this does not seem to suffice to keep it always afloat. After a few days it slowly sinks to the bottom, where, in eight or nine days, at a diameter of one-twelfth of an inch, it has developed from the ova into the larval stage. When the egg is deposited, and after fertilisation, it may be taken to be one-twenty-fifth of an inch in diameter, the same width apparently as the flounder, a contradiction in size that seems difficult to understand, but Nature has her uses always although her intentions are rarely known.

Early Growth.

When the fish is one-eighth of an inch long, its appearance is not unlike that of a young gurnet, which is gradually exchanged for the adult shape of the turbot, until, at about one-quarter of an inch, the lower eye begins to draw down, and the position of the upper eye that until now has been on the other side of the head, becomes apparent; the dorsal fin is in position, the anal, or under, fin is working forwards towards the head, and the spiky protuberances upon the bone of the head and flesh begin to form.

At an inch, or slightly less, in length, the transformation is complete, but, unlike its fellows of the same class, it has not undergone these changes at the bottom of the water.

The Transformation Stage.

Gradually it has assumed the horizontal position, swimming more and more lop-sided until the transformation is completed.

Gradually the colouring—which at the first was on its back, like that of a whiting or other long-growing fish—leaves the under side and concentrates on the left or upper side, but, with predatory instincts early developed, it still comes to the top of the water, seeking the helpless fish that are smaller than itself, until, when something over an inch in length, it seeks the floor of the sea for food to develop the habits it has learned above.

Development and Growth.

As to its growth, it is possible for it to be fairly rapid; it is recorded that in captivity in the Southport Aquarium some specimens, three inches across, increased in size so that after two and a half years they weighed 10 lbs. each, and in another two years 20 lbs.—a rate of growth of 4½ lbs. per year!

Doubtless the custodians knew the fish that was esteemed by them the most, and took care to have it there in plenty, and the turbots were relieved from the physical strain and waste of swimming long distances to find their food as the seasons advanced, but making all these allowances, the rate of growth seems almost incredible.

When Out of Season.

The spawning time may be looked upon, on the East Coast of Scotland, as May, June, and July, whilst in the North Sea August should be regarded as the principal month, but the fish rapidly recover, although one seems to find a preponderance of female fish the cutting up of whose thin side is always a wasteful process; the enlarged body cavity, the gaunt bone below it, the thin flap all shrunk into skin, makes the fish in these weeks an unprofitable one indeed. The dealer is apt to ask, "Are there not any male fish?" and if he will ask it of the fishermen, they will most likely say, "No, we never saw one," or, "have only seen one in six months," which things may be true or may characterise their want of observation, anyhow the male fish seems absent entirely to the fishmonger, although the naturalists say that the proportion of the female is practically as two to one in the male fish.

The female fish is found to be mature between the lengths of fourteen to eighteen inches, the male at about twelve, the ages being respectively two years and one as the lowest limit.

A Left-Handed Fish.

The turbot is the principal one amongst the few left handed food fishes, and is fairly constant, although there are exceptions to be met with from time to time, which exceptions include the reversed type, the double, and the albinos, whilst fish have been found with the upper part of turbot form and with scales of the brill beneath, the majority of these will be found to be right-handed.

These reversed or variable types have this in common, that both sides are equally thick; it is the top *thickness* that is reproduced, and not the underneath thin side, and any shade of colouring on the under side may be taken as an indication of a double fish of this character.

The Sea Area in which it is found.

The life of the turbot may be said to be lived within a 40-fathom-depth line, a line which keeps him well within the reach of the train of hooks of the liner, whilst at less depths than this he may be taken with the hook-like spear, as used by the fishermen of County Down in Ireland some few years ago, if not now, of about thirty feet in length, which was darted down to even greater depths where the fish were known to congregate.

Its region of latitude extends from Denmark to the south part of Scotland, around the British Isles—those on the West Coast of Ireland are said to be of the finest—along the coast of the Bay of Biscay, and into the Mediterranean, the Adriatic, and the Black Sea, but becoming scarcer as it proceeds, one reason why the big fish of Domitian was accounted such a prize.

It will thrive in an inland-lake where the water is brackish, in common with several other classes of fish which pursue their prey at the estuary of a river and ultimately find themselves in nearly fresh water. They are able speedily to accustom themselves to the altered degrees of salinity in the water, even if they do not prove themselves able, as the herring has done, to thrive in fresh water altogether.

In Iceland the fish is unknown and at the Orkneys it is rare, which will account for the great disparity between the catchings landed in Scotland and England. Japan has the fish, and esteems it, as do the people wherever it is found, but in America it is unknown.

Its Mediæval Value.

Its value has always been realised, for in the sixteenth century, when ten plaice were sold for 10d.—1d. each, the turbot cost 2s. 4d.—a desparity as great, or greater, than any which exists at the present day.

Unlike the salmon, with which it shares the pre-eminence, it has not yet been affected by man's quest after it as food, although the constant fishing might lead one to expect its whole or partial failure.

A Great Freight from Heligoland.

Frank Buckland records one freight which came to market in June of 1870, bringing fifteen hundred turbot which had been caught off Heligoland, that little speck of granite rock which has contributed, not a little, to the European situation of would-be dominant militarism.

This was before the days when the island was ceded to Germany, and it is not to be expected that such hauls are possible now, although it is to be hoped they will be in the future. It was to this neighbourhood that the Dutch came in June after the Flemish Banks had been fished over and the turbots had gone on their northward migrations.

The English Figures.

But with all the continuous fishing it is a relief to find that the quantities landed do not decrease.

The English statistics give as caught—

in 1912, 62,050 cwts., valued at £282,153
1913, 64,914 ,, ,, £2,187,174.

Of more importance, perhaps, is the fact that the amount caught per day's absence at the fishing by each English boat has not decreased, rather has it increased, a tribute to the reproductive powers of the fish and its ability, by burrowing beneath the sand and mud, to escape the scooping up effect of the omnivorous trawl.

Scotch Statistics.

The Scotch figures are relatively small, and do not show the same favourable condition of the fishing. The catchings are as follows:—

1909, 6,346 cwts.
1910, 4,987 ,,
1911, 4,529 value £13,845
1912, 4,038 ,, £12,330
1913, 3,791 , £12,620

a condition for which the authorities cannot as yet advance any reason.

The Largest Fish recorded.

It is possible that the big fish which have been recorded from time to time will not again be found.

Couch tells of one that was caught in Scotland of the weight of $90\frac{1}{4}$ lbs., and of another weighing 70 lbs. taken at Plymouth in 1739, but to meet one now as heavy as 30 lbs. is a rarity; such monsters are possibly things of the past, to whom life would not be possible with the modern trawl sweeping over every acre of their feeding grounds.

The Preparation of the Turbot.

For the turbot there does not appear to be any other form of preparation and use possible than that of boiling—in sea water if possible; in this manner it is undoubtedly best and gives to the eater the greatest amount of satisfaction. It is an open question whether any other sauce than just a plain one, composed of the little liquor in which the fish was boiled, should be used, although the epicure has professed to find the proper complement and counterpart of the turbot in the lobster, whose berries, or spawn, must be used to colour the sauce, and whose coral be employed to decorate the fish.

We may be allowed to express the wish that both fish are distinctly good, the lobster as *par-excellence* the salad fish, and the turbot the prince of white boiled fish.

The Ancients told that all the flat fish had been rolled out thus for being disagreeable, the turbot especially for showing temper in upsetting the nymph he was carrying on his back; we will not dispute the story, we were not there to see, but of this one thing we are sure, never since that day has the fish been disagreeable to any one who has interviewed or discussed him.

CHAPTER XI

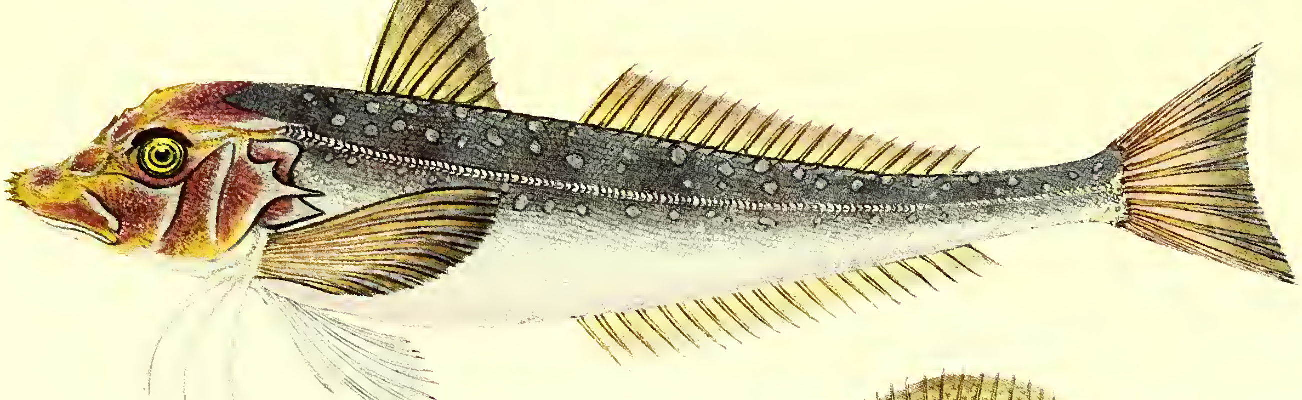
THE SOLE

Without any discussion as to the best, or finest, fish in the sea, as to which there might be disputes amounting to but little agreement in the end, it can yet be said without fear of contradiction, or need of controversy, that the favourite fish of the sea is the sole, the *Solea Vulgaris* of the scientist, who might well have found a name more in consonance with its goodness, instead of giving the idea that it was classed with the common fry.

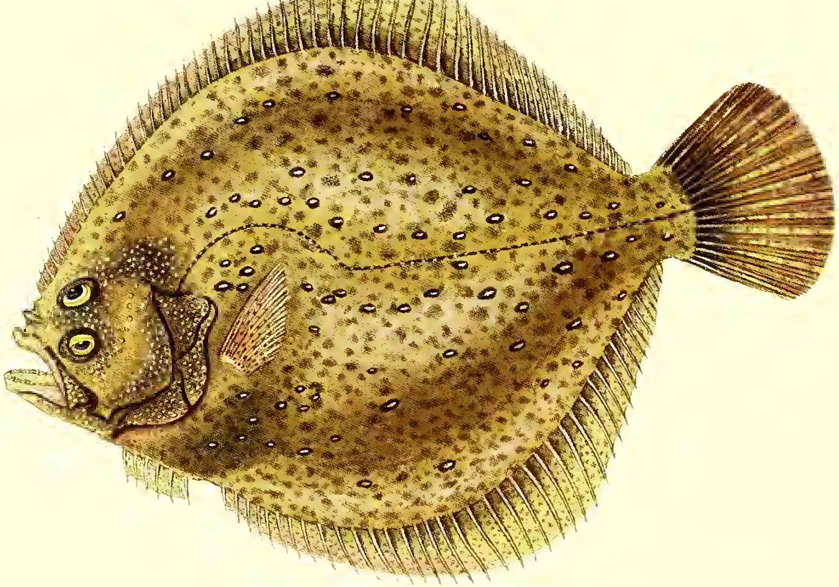
Its Delicate Daintiness.

The *Sea Capon*, it has been termed, but that is a misnomer, except as viewed from the point of excellence; the *Perdrix de mer* of the French is much the more apt designation, for of fat the sole is practically devoid, and a capon that is not fatted is not of the capon order at all. The little brown bird, the partridge, holds its own against the greater and more imposing pheasant, and relatively the sole is in the same order of position amongst its fellows of the sea.

Delicate and dainty, there is none other to compare with it, and thus it will always remain the favourite with us, as it has been with our friends in France, whose christening of it dates from before the year 1553, when, if it were popularly known in England, we possess apparently little notice, but the record of Willoughby, the naturalist, with Ray, of the following century, and one other, Venner, in 1650, whose description reads: "The sole . . . is remarkable for whiteness and purity of substance, pleasant taste, good juice, and far exceedeth all other sea fish. It is verily to be reckoned amongst meats of primest note, and for such as are infirm and sick *non magis quàm salutaris cibus.*"



GREY GURNARD.



TURBOT.

London: Virtue & Co.

The Greek gave to the fish the name *Bouglossus*, literally ox-tongue, but, as has been pointed out, not meaning the tongue of an ox, but only a *large* tongue, which member the fish most nearly resembles. From the Romans came the word *Solea*, its oblong flatness being referable to the sole of the foot. The tongue-fish, as a name, has clung to it in Spain and Italy, whilst we, as naturally, retain the Roman *Solea*.

The Sole in Greek Life—and Play.

In *Carina*, one of the plays of Plautus, Olympio asks shall he bring some tongue-fish, to which the reply, with the question, freely but cleverly rendered, was:

> "'Fresh tongues for sale! Who'll buy, who'll buy?
> Come sir, will you? No friend, not I,
> Of tongue enough at home I've got,
> In my old wife, Dame Polyglot.'"

—a libel on the fair sex which has bridged many ages since.

Good things go not far afield, and with the turbot its area is circumscribed, inhabiting the same latitudes, with the exception of Scotland, where it is so little known as not to have a place in the records of the Scottish Board of Fisheries.

New South Wales claims to have a sole at Port Jackson which is better than our own, but that is probably a claim prompted of patriotism; America has a sole, but all good Americans come here to taste ours and to forget their own.

The Habits of the Sole.

The sole is during the warmer months of the year to be found in the shallow waters of our estuaries, and the alike-shallow waters in the sea, and from this habit probably came the opportunity of our forefathers to find it, but it is doubtful whether such findings gave them as fine a flavoured fish as is taken from deeper waters by the trawl, for the more in-shore the fish is found, the more probability is there of their being there to recover from the effects of spawning, which takes place in the early months of the year.

With colder weather at hand the fish *school* off to deeper waters, such as give them greatest security from cold commensurate with the amount of pressure they are able to bear, which would appear to be at 50 to 55 fathoms depth of water, at the extreme, but with 30 to 40 fathoms as the mean and the usual. This finding of the fish at this depth in the North Sea is one of the romances of the fish trade, and one that, unlike romances in general, had a practical outcome — the founding of the modern port of Hull, and following, that of the still more modern Grimsby.

A Romance of Sea Life.

Brixham is known as the parent of the beam trawling in England; since when — who knows? The Brixham men fished the channel, and seized upon Thanet as one advantageous spot whereon to plant a colony; certainly they were nearer the metropolis, nearer also to the wealth of the North Sea, to which their own bays and channels were not to be compared.

One of these Ramsgate boats, of Brixham origin, was blown further north than usual, but as a forlorn hope they cast their net, and the most "miraculous draft of fishes" in history was the result; they had enclosed a net-full, mostly soles!

The Silver Pits—and Hull.

This occurred in what was aptly christened the outer Silver Pit — in the same spirit which led their western *confrères* to call a new bed of great prolific yield, California, in memory of the mining country which was then the rage.

Such fortune as the Ramsgate men had was not to be kept secret, the news spread, and others shared in the wealth of the Silver Pits and the Dogger Banks, of which they formed a part. Hull was found to be a convenient port, and to it came the fishermen and their wives from

Ramsgate and from Brixham, migrating to and fro, spending the six or seven months of the winter season at the northern port, and going south for the summer, an inversion of the ordinary practice, but business and the getting of a livelihood has little to do with the ways of pleasure or of comforts.

Hull might have become greater; Grimsby seized her chances as they arose, and won, whilst Hull lagged and lost ground, never to be regained.

The Price of Soles in 1844.

In those early days — 1844 marks the date of the discovery of the Silver Pits—it was no uncommon thing for a trawler to bring ashore from one to one and a half tons of soles for a night's catching, which would be sold for 12s. to 16s. per cwt. when prices were good, but might be sold, and often were, for half the money. As the Silver Pits ceased to be the great gathering ground of the sole, devastated by the insistence of the trawling, another sole resort was found off Heligoland in 1860, and yet another at *The Sylt* in 1873, but each in turn have yielded the gold of their primeval harvest, and lapsed into the ordinary trawling ground of little greater sole value than any other region.

Such doings will "ne'er again be seen and . . . ne'er I ween" will there be the like again, although such is the reproducing powers of the fish that were war, or other force or factor, to give the Silver Pits and the neighbourhood a compulsory rest, it is more than probable the same results would be achieved.

We may blame the taking of the golden egg, but where is the line to be drawn? Whilst good merchantable fish lies waiting for the next comer, who is to say when the next comer shall cease to come?

Whether, the "pit season" being a well-known period, a self-denying close-time should or could be observed is a matter for the expert *plus* the practical men to decide.

A Yorkshire "Find."

The Silver Pits, however, were not the first rendezvous of the sole to be exploited; thirty years earlier, about 1800, according to Donovan, a bed of very large soles was found off the coast of Yorkshire. Until this time, as may be gathered from what has been written, the soles of the eastern coast were comparatively small, the in-shore fishery only being known, and these were the first of the advanced adult stage found; they were very fat, and somewhat soft, presumably from the character of the bed on which they were found.

The Food of the Sole.

It would appear that the sole is partial to a muddy floor rather than to one of a sandy nature, and where they are thus found mud appears to yield them the principal part of their sustenance, drawing it from the small worms and smaller food, which the worm themselves feed upon. In any given number of the species taken mud forms the contents of the stomach of by far the largest proportion, it being very rare indeed that anything in the nature of a fish is found.

A more than ordinarily peculiar feature of the sole is that it thus takes on a character, or quality, of the district or bank from which it is taken. The South Ground sole of the Ramsgate trawlers is a well-known and justly esteemed fish; in like manner the Brixham, the Tenby, the West Country, and the Thames fish have always had their distinctiveness and following, as did also the Brighton fish in the early part of the last century, but part of their value and esteem, and their superiority in the London market, may have arisen from the fact that direct and quick land-carriage was more possible for the Brighthelmstone district than for many another, which happened by the decrees of fate, to be farther removed from the metropolis.

Its Habits,

The persistence of the sole, in spite of continuous trawling, would appear to be in consequence of its habit of burrowing in the mud, or sand, leaving only its eyes exposed, but whether this peculiarity will serve it now that it is becoming customary to thread the ground-rope of the trawl with large wooden bobbins, which revolve and crush upon the surface of the sand, remains to be seen; perhaps with the new method the fish will acquire deeper, or some other protective, habits, a result which is devoutly to be wished for.

The power and tenacity of life is remarkable in the sole; it can live when removed from the water where others of its family die at once, and, like some other fish, can adapt itself to brackish water, and even to water that is not tidal, but is always flooding from the land, and therefore fresh.

At rest by day, the sole feeds at night, a fact which is duly taken notice of by the trawler, who knows that his catch of soles by day will be small, and he must therefore cast by night, or this, the most expensive and desirable fish which he can capture, will not be caught.

And Life History.

The sole is amongst the right-handed fish, arriving at this stage by the same routine as the remainder of the *Pleuronectidæ*, or side swimmers, for it is to be noted that although the sole is a flat fish, it is not a flat fish of the same order as the skates and rays, who are physiologically what they are in actual life, whose top and bottom are really such, whilst with the sole and plaice family the upper and under surface are both *sides*.

The Larvæ and Transformation Stage.

The eggs of the sole are one-twentieth of an inch in diameter, and are buoyant by reason of a number of very small oil globules peculiar to the ova of this fish spread over their surface; with very slight modifications the larval and the transformation stages are the same as those of other flat fishes, except that each larva has an air bladder, which apparently allows it freedom and choice of depth of water, until at about three-quarters of an inch in length the transformation to the adult appearance is complete, or practically so, and the air bladder is gone, the little fish being then perhaps two months old. From thence onward the fish inhabit the in-shore ground, being found when two to three inches long at a depth of from two to three fathoms, in the autumn, and coming closer in-shore, to be taken with the ordinary shrimp-net in the following spring, and reaching, when twelve months old, a length of four inches, some few attaining to six inches as a maximum.

Maturity is reached when the length is from ten to twelve inches, and the age is two years or thereabouts. The female fish preponderate, the proportion being about one hundred and fifty to one hundred of the male sex.

Frank Buckland computed 144,000 eggs in a sole weighing 1 lb., but as there are quantities which exceed this weight, it must be expected that the ova would increase, and be in even greater ratio than the sizes.

Some Record Fish.

By contrast with the insignificance of the larval stage, one refers, in passing, to the fish weighing 9 lbs. that in June of 1826 was taken to Totnes Market; it was 11½ inches wide, and one is obliged to give credence, as the information was supplied to Yarrell by the Rev. W. F. Cornish of that town.

Although others of 6 lbs. and 7¼ lbs. have been recorded, this largest fish of all must have been as rare in its way as was the sole weighing 1 lb., caught by a fisherman friend of the writer; it was a double fish, dark-sided on both sides, but possessing eyes in each side of its head, a fish that, instead of being sold for a few pence, should have been preserved as a useful instance of the curiousness of Nature in some of her freaks and moods.

From Fact to Myth.

For the one-sidedness of the sole the Polynesians have a story that Ina, the daughter of two Deities, attempted, or wished, to flee to the Sacred Isle. One after another the fish had been called upon to make the transport, but, unable to bear the burden, upset the holy Ina in shallow water. The sole essayed the task, and managed until the breakers were reached, when he too failed the heavenly maid, who, in her rage, stamped upon the unfortunate fish, and that with such force the underneath eye was squeezed to the top — an imaginativeness this that would puzzle an old-world people to excel.

There have been proposals to balance the wastage of catching by cultivating the species, and possibly some sort of success would attend the effort, although one cannot be sanguine. The work would be immense, and the proportion that lived infinitesimal, considering that one has only to become accustomed with the effects of a tide upon a long stretch of sandy shore, leaving millions of fry to die before another tide arises, or the even more disastrous effect of storms and currents in devastating the larvæ in uncounted quantities, to feel pessimistic of any good resulting from the experiment.

The Roman Vivaria.

From this artificiality of method we turn to those of the Romans, whose vivaria, or natural aquaria, formed in rock and territory near the sea at great cost, and upheld in extravagant manner, raised the irony and scorn of such men as Cicero, who spoke contemptuously of "those blessed fish-pond men" to whom the fish were sacred pets, whom no one ever thought of "summoning to the dining-table," but whose owners were never happy unless they were entertaining and fattening them with dainty food.

Instructions in full are extant as to the method of making these *vivaria*, and, says the instructor, Columella, this fish culture is not to be looked upon as a common affair, but as one especially praiseworthy and honourable, and one that, when properly conducted as an occupation, would be a source of profit to families, " For he who has bought islands or land near the sea, and cannot derive any profit from the fruits of the earth on account of the sterility of the soil near the sea, may make his profit from the sea."

The writer gives explicit instructions how the live sole and others are to be fed: " the gills and intestines of fishes—in fact any kinds of salted refuse swept from the fishmonger shops,"—a new use for offal surely, but one that in our day, along with the vivaria, is superfluous in view of the fisherman's trawl.

The Records of Recent Years' Catchings.

The quantities of soles landed in 1911 showed an improvement as compared with 1910, and 1912 marked yet a further advance. The figures for 1912 and 1913 are as given under, from the Annual Reports of the English Board of Fisheries :—

in 1912, 70,179 cwts., valued at £464,304
„ 1913, 66,766 „ „ £465,286

a decline in the latter year of 3,413 cwts., but the aggregate values being greater, a feature which is common, and a gratifying one to the fishermen and the trawl-boat owners.

The decrease is largely due to the falling off of the landings from the Portuguese and Moroccan waters, but the North Sea may be still said to hold its own, contributing, as it did in 1913, some 45 per cent. of the total landed.

As to prices in general, one is glad to know that in recent days, whilst the common or " offal " fish has reached to prices altogether unheard of, the sole has remained comparatively low, giving one the impression, and the hope, that the day is yet far distant when we should have to say with Juvenal, the satirist of old, " The fisherman could perhaps be bought for less money than the fish."

CHAPTER XII

THE HALIBUT

From the point of antiquity the halibut, or holibut, as it is termed in some districts, can claim lineage with the best, being noted as one of the fish which the Norwegian discoverers of America at the beginning of the eleventh century found in Massachusetts Bay. As to the age of individual fish who shall say? 1914 has seen the landing of one fish 434 lbs., and another of 389 lbs. weight, the latter being 6 ft. 6 ins. long, with its central steaks, when cut, measuring 1 ft. through.

The Age of a Fish.

As to who was who, and which dynasty of kings had rule when these fish passed from the larval stage, none can tell. The only guide at present possessed is that of a fish caught off Iceland in the spring of 1904 which was scored "T.M. 1901"; taking three years to have elapsed between the two catchings, and the weight of the fish as just over five pounds at the last catching in 1904, there would appear to be evidence of a very slow growth for a fish which could ultimately obtain to proportions such as we have recorded.

The Fish for Holy Day.

Helgar Fisk, or Holy Fish, the Norwegians termed it, the fish for Holy Day, and thus the derivation of its name; the *Hippoglossus* of the scientific men being obtained from the *Bouglossus* of the Greeks, which we saw was used for sole = ox-tongue, the prefix being changed to *Hippo* = horse in the same way as we use the term for something of a large character, horse-mackerel, horse-chestnut, and so forth.

Wynkyn de Worde, Caxton's successor, in his "Boke of Kervynge Emprynted 1413," has mention of it, not that the carving of the fish is so particularly difficult as to need a description. In 1550 Rondelet informs us that "it is a hard, pleasant fish, similar to that of the turbot," whilst at the beginning of the eighteenth century we read that it was occasionally seen in London, the assumption being that it had been lost sight of in the interim.

The English estimate of its value would not place it as being worthy of the term Holy, either as regards its goodness or suitability for special occasions, but the northern nations cut it into long strips, and dry it in the winds of spring, that it may be stored as is the stock-fish, and doubtless, compared with this fish which was a staple of diet through the year, the *holy*-but, would be a welcome change indeed.

The halibut is mostly line-caught, and comes mostly from the northern seas, being found on our South Coasts in only isolated cases, the South Coast yielding only 74 cwts. as against the 106,000 cwts. for 1913 for all England.

The Habitat of the Halibut.

It may be termed a sub-arctic species which ranges coincidently with the cod, being found in Siberia, Spitzbergen, Greenland, Newfoundland, Alaska, and along every coast which trends away from the Arctic Circle, with an exception in the case of the Baltic, which, though a portion may intrude into that northern area, is yet land-locked from the north, being entered from the Skager Rack at the northern end of Schleswig-Holstein. At the other extremity of latitude there is a record of one fish being caught at Biarritz on the Bay of Biscay.

As becomes its size the fish is a large contributor to succeeding generations, one halibut weighing 91 lbs. with a roe weighing 18 lbs., being estimated to contain 1,327,000 eggs, and as this weight of fish is only just above the ordinary, some idea can be formed of the amount of ova in a fish weighing from three to four cwts.

Its Life History.

The eggs of the fish are buoyant but without the globule of oil, and the after-growth of the fish can only be referred to, as far as our complete knowledge goes at present, as problematical. Small fish of about four inches have been found, the most definite being one in the maw of a codfish caught off the coast of Norway, whilst a haul of young fish, about four inches in length, is recorded to have been captured in a fleet of herring nets which had been sunk and were recovered off Peterhead in 1883.

Like the lemon sole the halibut is without the characteristic spike or spine of this species, for the possession of which adjunct in those that have it no reason can, as yet, be assigned.

The halibut is the nearest approach of the side swimming flat-fish to the true upright swimming species, it being, with the exception of the sole, the most narrow and thickest through for its length, of all.

The spawning time may be said to be variable, extending from March to June in the North Sea, and from April to September in the more northern areas.

The smallest ripe male fish found is 30 inches, and the female 43 inches in length, its food being apparently anything within reach, from a live ray to a leaden plummet, or sinker, upon a line with which the seamen were taking soundings.

The Culinary Value of the Halibut.

As a fish for eating purposes it is apt to be coarse, compared with the turbot, but is by no means an indifferent fish, as can be proved by baking a slice or piece in the oven, or by the paper bag method. It has a flavour and character all its own, but any way of cooking which allows these to be dissipated leaves it a fibry, tasteless fish. One enthusiast goes even so far as to say that it excels turbot, salmon, or sole. The grating of nutmeg upon it, which he recommends, would not be agreeable to all English palates.

As a boiled fish its value would depend entirely upon the boiling, or the person boiling it; there are possibilities in the fish, but these are not obtained by careless methods.

The Halibut Fisheries.

The United States have a very large fishery for halibut, one of the principal being the salt halibut. In this the boats are away until loaded, and as the fish are caught they are salted on board, to be afterwards smoked on shore.

In British Columbia is another important centre, and from this has been coming for a year or two several consignments of glazed, frozen fish for the English market, which have proved very useful for a sharp, quick trade.

The Pacific Coast Fisheries, however, are greatest of all, it being stated that they now produce some 60,000,000 lbs. of fish in a year, a total nearly four times greater than is landed in England and Scotland combined.

Cold Storage.

One cold storage plant, the largest for fish in the world, is now installed upon the Pacific Coast to deal with the trade, and this has a capacity of 15,000,000 lbs.

The demand in England is for the medium-sized fish, such as the North Sea supplies, but as cold storage has equalised the products of the world in other directions, we may look for some such use of refrigeration in the future as will give our homeland the produce of the Pacific Seas. Even if it does not make good the words of Cowper:—

> "And give the Pole the produce of the sun,"

it may, and will assuredly knit the unsocial climates into one, and to that extent assist the bonding of the nations—a consummation for which all business men will pray.

Statistical.

As showing the vastness of the business and the moneys concerned in it, we give the relative figures for England and Scotland as given by the official records.

For England and Wales the amounts and values landed were—

in 1902,	126,079	cwts.,	valued	£252,722
„ 1912,	118,393	„	„	£355,401
„ 1913,	106,663	„	„	£349,173

For Scotland—

in 1903,	28,892	cwts.,	valued	£49,186
„ 1911,	55,370	„	„	£107,865
„ 1912,	49,696	„	„	£107,795
„ 1913,	48,945	„	„	£111,549

Figures these which do not so much show a growth of quantities as a steady rise in values, a condition which whilst it tells against the fishmonger and the public, shows in favour of the fisherman and the trawl-owner.

CHAPTER XIII

THE BRILL

A DIPLOMAT of the Old School, whose gastronomical knowledge was at least the equal of his diplomacy, in derision dubbed the brill "the workhouse turbot," and in the course of a long connection with the fish the writer has not found a term or description so *apropos*, so fitting to the truth.

The Victim of Circumstances.

The fish with pretensions, would probably equally well describe it, for, whilst it affects the shape, the general appearance, including the left-handedness of the turbot, it cannot support the position with anything beyond the assumption of dignity.

It suffers, too, from the fact that Nature has equipped it thus, as the greatest handicap a man of moderate parts can have, is the fact that he is his father's son, when that father has made for himself a name. The goodness and sweetness of the brill would have had its singers and reciters had it been cast in some other mould, fighting its own way in life without the adventitious aids of size and shape, and the other characteristics of its more fortunate relation. As it is, all the records of all writers break off short with just the bare truths, and they of but scanty proportions and interest.

Its Life History and Homes.

The brill inhabits the same territories as does the turbot; the same latitudes and longitudes are common to both, except that we cannot trace its existence in the Black Sea. As for the Mediterranean, it would appear to be more common there than the turbot, leading some learned commentators to express the opinion that it was the brill and not the turbot which led the Emperor to convoke his senate, supporting this by quoting the fact that in many brills the spines or bones of the dorsal fin, which are nearest the head, have a wavy, defiant look, especially when boiled, the skin of the fish not extending over them as over the remainder of the rays.

Against this remains the fact that the brill is not known to approach the turbot in size and weight or to grow to the extent the Roman historian would have us believe this famous fish attained. Some eight to ten pounds would appear to be nearer the maximum anywhere, a point difficult to understand when we know that the life history of the fish is almost synonymous with that of the better known turbot, and that its food is identical in every respect. The surmise left to us is that Nature has endowed it with a temperament which is less aggressive and an appetite less ravenous and more easily satisfied; made it more slow and phlegmatic, careless of its surroundings or the temptations of circumstances, an estimate which is borne out by the fact that the line-caught fish are far less in number than the turbot, and that we have to rely mainly upon the trawl for our supply, whose motto is emphatically "All is fish that cometh to net."

The Early Stages of its Career.

The food of the brill would appear to consist of what is normally present in the waters around him, and whilst investigations into the question of migration are not yet completed, it will probably be found that he is not such a wide traveller in search of more and better food as his superior. We only know for a certainty, as yet, that he affects the same localities, and is to be caught in the same neighbourhoods by either trawl or net, and occasionally with the line.

In the ova stage the egg is approximately one-third greater in size than that of the turbot, and at its development into the larval stage also correspondingly larger. The egg is buoyant, having the oil globule to assist its greater density, and, after hatching, the fish retains its upright swimming powers from the three-eighth-inch stage to the three-quarter-inch, when it begins to "go over," and the eye finds its way across the ridge, completing thus the transformation when about an inch in length.

At this stage the young fish is perfect in shape and in detail, its remaining at the top of the water all the while, as does the turbot, doubtless assisting in the more complete development of the fish.

Its after life would appear to be lived at such depths as correspond with its age, passing from in-shore to the 5-, 10-, 20-, 40-fathoms line, as its strength permits.

At the estuary of a river, too, in search of food, it has been known to ascend the stream and to become acclimatised, if the word may be permitted, to the altered degrees of salinity in the water, thriving under the changed conditions, the same fact as is noted in regard to one or two other fish, the sole and turbot, for instance.

Differences between Male and Female.

The two fishes, male and female, according to market records taken, appear to exist in respective numbers as 100 to 150, whilst the sizes may be said to be as 100 to 125, the female preponderating in each case. The fish when fresh caught have a pleasant speckled appearance, with here and there a pearly white mark showing on the upper surface, but after a day or two, a dead, drab, dark shade supervenes, increasing each day until the ragged appearance of the scales is the most prominent feature of the fish.

The Origin of its Name.

The name of the brill is said to come from the old English *Brithel*, streaked, speckled, variegated, used in Cornwall for the mackerel, but common in some other districts for other fish whose distinctiveness is that they are thus variegated.

It is surmised that the word *Brett*, used in some places for the brill, is simply the singular, taken from the same word with the using of *el*, as brill, to represent the plural.

The shape of the brill lies between that of the turbot and the plaice, being more oval than the former, and rounder than the latter, and differs from both in that scales are found on both sides, these latter being absent from both of the compared species.

A double-brill is not uncommon, it being sometimes accompanied by a notched-out appearance above the head and in front of the dorsal fin, as though, where the eye was travelling around from the under to the top surface, it had permanently disarranged the growth of the fin; in these cases, not common, the head and face have a fearsome appearance, and wear a distinctly pugnacious look, entirely at variance with the ordinary placidity of the species.

The spawning time may be taken to be finished a month earlier than the turbot, July being the last month when, in the North Sea, it is found in spawn. The disastrous effect of the act of spawning is by no means so marked in the brill as in the turbot, and the recovery of the fish, speaking from experience, is more rapid, as can be easily understood.

Brill confounded with Turbot.

It has been said that the "unknowing ones" are tempted to buy the brill, believing it to be turbot. We are of opinion, however, that more brills are purchased because they are a little cheaper, and their presentment on the table has the appearance of the better fish and that any deceit, where practised at all, is on the side of those who should know better, and is not practised by the fishmonger.

The Differences contrasted.

For all those in doubt, one infallible condition exists; the turbot has spines or spikes upon the black side, and these cannot be by any means got rid of short of cutting away the skin; the base of these stud formations is below the skin itself, and the strength of their position is the support which is given by the skin above that base. The brill has scales above and below, and after the skin has been scaled it is as smooth and loose as a haddock under similar circumstances. By spike, or scale, each fish may be known for what it is, the only exceptions being the rare ones, which only prove the rule, when, as already said, some malformation or hybridising has taken place.

The Cooking of the Brill.

If the brill is carefully boiled, and served with a simple sauce, of which the water it is boiled in forms the moistening element, it is not by any means a fish to be despised. The shrimp sauce which is usual is a far more fitting accompaniment than the expensive lobster; the water, the slight thickening, and the shrimp combining in a remarkable degree to bring out the flavour, and the best, that is in the fish.

If the occasion is a particular one, the writer would suggest that the shrimps be peeled for the purpose, a half pint of fresh boiled brown shrimps being productive of the right flavour, and more of it, than double the quantity of the picked, and pickled, variety, which have by far too much of the leathery character, and too little of the true *Crangon Vulgaris*, or common shrimp, about them.

Upon Sauces in General.

Without further enlarging on the question of sauces and the smothering up of the quality and goodness of the fish by the relish, we conclude by a quotation from Bishop Jeremy, who uses this fact as a simile, and also the further fact that in his day the turbot was not greatly thought of, to point the moral of a sermon: "To make thy meal of sauces, and to make the accessory become the principal, and pleasure to rule the table and all the regions of thy soul, is to make a man less, and lower, than an oglio"—a medley or a mixed dish of meat and vegetables—"of a cheaper value than a turbot."

Mainly Statistical.

Coincident with the increase in the catching of turbot the English figures for brill show also a slight advance; there was landed—

In 1912, 18,053 cwts., valued at £63,523.
„ 1913, 19,954 „ „ £71,705.

Not a notable betterment, but satisfactory, inasmuch as an actual decline has not to be recorded, and a considerably enhanced price was obtained by the sellers.

For Scotland the figures are negligible almost, indicating that the area which the brill inhabits is beyond the scheme of operations of the bulk of the northern fleet. There was landed—

In 1911, 155 cwts., valued at £378.
„ 1912, 258 „ „ £560.
„ 1913, 208 „ „ £422.

Figures these which show the fish, although scarce, to be unpopular, perhaps less known, to the bulk of purchasers in Scotland, inasmuch as the rate obtained per cwt. is something like 30s. less than is realised in the south.

It is a useful fish, nevertheless, filling a useful niche in the economy of life, and when well dealt with by both fishmonger and purchaser a satisfactory fish to all concerned.

CHAPTER XIV

THE MACKEREL

Its Qualities.

For the fishmonger this is one of the important items of his business, second only to that of the herring, at least, in poor and medium class neighbourhoods, where the mackerel is looked upon as the fish that, with the herring, gives the possibility of a meal at once cheap, appetising, and nutritious.

These are the three necessities, the essential qualities, which must attach to a fish before it can be popular in the sense that it is a business-bringing article of every-day commerce.

Fortunately, there is not any appearance of a limitation of its values to the trader; the supplies are consistent, a falling off in the west is more than counterbalanced by an increase in the east, its cheapness remains constant, whilst of the two qualities which have to do with its acceptance as a food, nothing that man can do is able to alter them.

A mackerel remains, next to the salmon, the most tasty fish we possess, more richly conditioned in this respect than the fresh herring, whilst it may be said to lack the daintiness of that universal fish. More nutritious than the fresh herring, it contains 12 per cent. less water and carries 12 per cent. more of nitrogenous matters—the flesh formers—whilst of fat it has an equal percentage.

Thus it has an even greater claim for consideration on the part of the purchaser, and, doubtless, these things are the reasons why it is steadily sought after by those whose incomes are limited, but whose provision-wants are always increasing, in addition to which a broiled or fried mackerel has an appetising fragrance which cannot be refused by a healthful, hungry man.

Its Continuity of Supply.

This being so, it is well that the supply is continuous throughout the year, a supply which is only useful, and has only been known, since the means of communication were extended so as to bring all parts of the United Kingdom into contact with each other, but which connecting up will have to be even better done in the future than in the past, for in only a recent report, 1913, of the Scottish Fishery Board, one is sorry to read this statement.

Speaking of the increase of mackerel as being referable to the East Coast, where large quantities were taken by the herring fishing fleets working from Aberdeenshire ports, it says: "The increase could have been much larger had a better market existed for this fish, as it is plentiful on both the East and West Coasts, but as matters stood fishermen in many cases did not trouble to take their catches to land but returned them instead to the sea."

Wasted Fish.

That catches of sixty and seventy cran per boat were thus dealt with seems a reflection on management somewhere, although when one learns that the abundance came in June and July, when for several reasons the demand is not great in our industrial centres, the deplorable results can be in part explained.

"A portion of the catch was tinned," is one remark of the inspector quoted above, whilst the quantity pickled amounted to 5,266 cwts., mostly for export to America. These two outlets would seem to point a remedy for future congestions, although, in the previous year, when special efforts had been made to establish a mackerel fishery, the fish had failed; the nets and gear specially adapted for the business therefore proved useless, and the consequent disheartening of the projectors kept them out of the business in the following year of plenty.

The Difficulties of Dealing with an Erratic Fishing.

The erratic character of the fishing is, therefore, partly to blame, but it would seem that when extra gluttings of fish, especially when of such a perishable nature as is the mackerel, are caught, it should be possible to convey them with rapidity to such widespread centres of population as to ensure their profitable use to the public. Tipped back again into the sea, they doubtless afford food for some of their carnivorous brethren, who will, in turn, themselves be caught, but their use would be greatest at first hand, and the loss to the fishermen would be avoided.

As to the preserving of the fish, another question is opened up, for the difficulty has to be conceded of providing staff and appliances for an occasional harvest, in like manner as it is found difficult to deal with one glut of English plums, happening erratically, in so many years.

Turning from the low figures, 2s. 9d. per cwt., obtained for the East Coast of Scotland fish in 1913, to the opposite extreme, one notes that a century since, in May 1807, the first boat-load from Brighton sent by land carriage to Billingsgate were sold for 40 guineas a hundred (120), being 7s. for each fish! The next load realised only 13 guineas, and again, in contrast, they are chronicled as being sold in Dover in 1808 for sixty for 1s.

High Prices, Ancient and Modern.

Thus the erratic character of the amounts realised for fish is not new in our day; it is over a century old, although the records of 1807 are possibly behind our great fore-runners, the Romans, for whom a fish sauce or pickle made from the entrails of the mackerel, and known as *garum*, realised £48, in our money, for a quantity equalling two gallons! exciting the anger and satire of men of philosophic mould of mind.

Fiction blended with Fact.

Like the herring, the mackerel had the reputation of retiring to the Arctic Zone for the winter months. Lacepede, the eminent French naturalist at the beginning of the nineteenth century, told of this fish being found there in land-locked bays and shallow, their heads buried in the mud and sand, their tails waving upwards; a figment of imagination on the part of the Admiral, his informant, that was quoted as a fact until very recent years. The other part of the story, that the fish were blind in consequence during the first few weeks of their release from their winter quarters in the spring obtains credence even now, or did until a little while since, the fishermen saying the mackerel were not able to see in the early part of the season, and that was why they were not known to take the hook until after the turn of the year. Investigations do not bear this out, and whilst the hook fact is true, the reason would rather seem to be that in the early months of the year the fish swim wide of the coast and are at sea, and hooking for mackerel being confined to small boats that only keep in-shore, these cannot catch them before the fish arrive.

Migration of the Fish.

Undoubtedly, the fish draw off from the coast for the winter months into depths where the warmth of the water is more congenial to them, and where, with the herrings and cod-fish, man cannot follow, and from that deeper sea sets out the schools, or shoals, that are to journey coastwise in search of food, one school travelling during January towards the coast of Cornwall, being off Land's End in the early part of that month. Beginning thus at the opening of the year, the season continues off the Cornish shores until June.

Perhaps more erratic than the herring, it can still be said that each school makes for its appointed districts at the relative periods assigned to it, it being found that lateness in one district acts to bring about a corresponding delay in arrival at another as the seasons follow on.

The object of coming into the neighbourhood of the coast is, as with all other migrating fish, two-fold—quest of food and the depositing of spawn—and each of these needs are instinctively recognised to be as urgent as is the other.

Food as the Prime Mover.

Primarily for food; and it is a revelation that instinct leads these vast hungry hordes to leave the place of their retirement—presumably for the time being able to yield but a bare living—and to take such journeys as will bring them into contact with food which has been silently preparing for them, able to find their way to the open door of a well-stocked larder, and to pass on, when the supply fails, to fresh fields and pastures new, but always on the sure and certain track of food.

Perhaps the same instinct exists in the mackerel as in the porpoise, the great enemy of the fish; a school of these predaceous animals will swim across the water until they come into contact with the zone through which the mackerel have passed, when, turning swiftly at right-angles, they will, by the scent, chase the fish which have passed until they find them; thus are the instincts of all forms of fish life alike, and that this explanation of the movement of the porpoise is rightly understood is assured from the fact that the water through which the mackerel has passed has a distinctive scent that cannot be mistaken.

As with the scent of the water, so with its appearance; an experienced fisherman, or the "huer"—the man who is seated on some cliff-side to signal the approach of the shoals of fish to the men in the boat—can tell from the colour whether herrings, sprats, pilchards, or mackerel compose the shoal, although it is easier to tell the mackerel shoal, like the shadow of a cloud upon the water, as the fish swim much nearer the surface than does the herring; this requires a net braced up to its bobbins, or surface corks, to be fully effective, thus differing from the method of fishing for herring, in which the nets need adjustment according to circumstances.

The Drift Net.

The recognised form of fishing for the mackerel is with the drift net, and this is worked in similar fashion to the drifting for herring, the nets being thrown athwart the tide, and after they are shot the end-rope of all, the "swing-rope," is affixed to the boat, which keeps the net fairly tight to its work and also extended, as is necessary, whilst, should the weather prove boisterous and unkindly, the swing-rope is "paid out" until boat and nets may be connected by a line up to one hundred fathoms in length.

As to the full length of the fleet of nets, this may be a mile, or more, according to the size and strength of the boat.

The Seine.

The seine net is used in Cornwall mainly, and for such districts where the net can be thrown around a shoal of fish each end being passed to some one on shore, when the net with its spoil is gradually drawn in.

The two classes of seine nets—for boat and for shore—differ in construction and in depths, but the purpose is the same, to enclose the fish and not to catch them by the gill; the surrounded fish being taken out at pleasure, or, as sometimes happens, being left in until the fish, having recently gorged themselves with fat food which would spoil their keeping and travelling properties, have cleaned themselves; a necessity this as the dealer knows when he has handled "first day" mackerel which have deteriorated beyond usefulness within a very few hours.

Ground-baiting for Mackerel.

That these shoals mainly swim shorewards on account of the need for food would seem to be borne out by the possibility of tempting the fish by distributing bait composed of morsels of fat fish that have been minced up finely.

Until comparatively recently the Americans used this method for catching the mackerel; barrels of a fat, oily fish, the menhaden, resembling a pilchard, were taken on board to be used as ground bait, and the mackerel were enticed by the tempting morsels to rise towards the surface, coming around the boats to be fed as chickens to the barn door, enabling the fishermen to use shorter hook lines with which a crew of ten to fourteen men could catch up to 20,000 a day. But the purse seine was introduced, a net of ten to twelve thousand feet in length, and varying from seventy to one hundred and fifty feet in depth, and gradually this has displaced the hook and line method, which is no longer used.

Mackerel-seining and Public Schools.

We used the word comparatively here because, although the purse seine was re-introduced to the fishery exactly a century since, it did not become general till 1860, but this was a fishing that went back to the days of the colonising of New England; within a few years of that event we have records of the colonists seining off Cape Cod by moonlight, and a fact connected with it is worthy of record here that the first public school was founded within ten years of that time upon the proceeds of a tax levied upon the mackerel fishery! Great had been the number caught on the old hook system, greater still the quantities under the new, but without any impression being made upon the parent stock, except to prove true the un-Euclidian axiom, "The more you catch the more you have."

Bait for the Mackerel.

Although the fish are blessed with the sense of scenting they do not use it under all circumstances, as is evident from the fact that when they are "on the feed" near the surface of the water they will rush for anything that promises a bite, if so be they can see it, and that it has a twirl, or glint, or glitter as its recommendation.

A metal spoon, a piece of a kid glove, the stem of a tobacco pipe threaded on the line above the hook, a sliver or *lash* of a mackerel—the piece of flesh cut from the bone just above the tail of the fish—each seems effective for the purpose, and even a bright hook, naked, has proved to be a snare, the impetuosity of the fish impelling it to take first and find out afterwards, providing a form of fishing that is perhaps not full-blooded sport, but allowing of more entertainment and pleasure than when one waits, with all the resources of Bond Street, to take the salmon which never rises to the fly.

The Mysteries of Migration.

There is one record in connection with the mackerel which probably gives the clue to a solution of many another mystery of migration. Some years since mackerel were very abundant in Massachusetts Bay, when there appeared a shoal of blue-fish, predaceous creatures like the porpoise, fish of about 20 lbs. in weight; the mackerel vanished, and the fishery languished, but the lobsters in the bay increased.

Enquiries and research showed that the blue-fish fed upon the mackerel, the mackerel had fed upon the lobster spawn, the mackerel had been driven off, and the big fish were not partial to the same fare, and thus the balance, or compensation, was struck, not that the blue-fish were the less voracious, by no means, but that their food was different; one dies and the other lives, a law of red-tooth'd nature everywhere, and the reason for many more erratic happenings in the great deep than we are at present aware of.

It is an impatience of manner which prevents the mackerel being a good subject for aquarium purposes, the restraint and the susceptibility of the fish to climatic changes telling against their successful adaptation to life in a restricted area, although they have been known to spawn when in captivity.

Thus we are able to learn little of their life history from observation in the manner which is open to man in the case of the sole and some other of the pelagic as well as demersal fish; knowledge therefore, must be gleaned from the sea or not at all.

As the season advances in such locality which they favour the fish draw nearer in-shore in search of food, being ravenous during this preparing time, but, as spawning time approaches, they remove to greater distances seaward, May and June being the principal months around the British coasts, and the months when, the fish being then prime, the fishing is pursued with greatest energy. The mackerel is not a fish that under any circumstances keeps a long while, least of all does it "last out" in the warmer weather, and thus it happens that should the fishing be late, or the weather warm, the heaviest supplies may come to hand when they are least able to be disposed of, least required in fact, for the hawkers, the people who sell the greater quantities, are busy with other things, early vegetables, French fruits, English strawberries, possibly watercress, and other articles that in particular need no cooking, and for which, at this season, the British housewife shows a decided preference; for the cessation of a fire for cooking or warming at each meal means a release from drudgery, and a relief only to be enjoyed when it is possible to buy the salads and other articles that are ushered in in the early days of summer.

Crying Mackerel on Sundays.

Promptness in selling is the one important thing with mackerel, especially when they come from the smaller fishing ports where ice is scarce, and where the amount of trade does not warrant a stock of it being kept on hand.

For this reason we find that in 1698 an Act was passed allowing mackerel to be cried through London streets on Sundays, and whilst a further Act of George III. regulated that fish brought into London on a Sunday night was not to be sold until Monday morning, the law was not enforced as against mackerel, and the same favour is extended to the fish at many ports by special reservation. It is the only fish with the possible exception of the shrimp, that is allowed to be cried on the first day of the week.

> "Law ordered that the Sunday should have rest,
> And that no nymph her noisy food should sell
> Except it were 'new milk' or 'mackerel.'"

This provision in favour of the person hawking mackerel on the Sunday still obtains, and occasionally one may hear the crying of them, but the force of public opinion has grown too strong for the practice to be ever again a common one, and with the increase of icing facilities at the fishing ports the clause could very well be repealed, and that without inflicting any great hardship upon any one in the trade.

The Beauty of its Colouring,

The mackerel is the fish which may be regarded as the most beautiful in colour of all food fish; the salmon and the whiting are in their silver dress all-resplendent; the mackerel has its silver, but it is only one part of its adornment and beauty. To describe its fleeting, gleaming, glowing, iridescent colouring is as impossible in words as it is impossible to the artist to portray.

In the coloured plate, vol. i. p. 152, the artist has succeeded very well in the reproduction of the fish in the centre of the display, but the opportunity in this case was curtailed by reason of the smallness of size, and the writer confesses to never having yet seen, but once, a fair representation of the beauty of the deep, because, for one thing, iridescent colours are not reproducible by the brush of the artist, and for another, they are too fleeting and variable, and the net-caught fish, as it is brought on shore, is not by any means the same as the uninjured fish drawn out of the seine, or from the hook, and laid alive in the boat, neither is its beauty long-lived; much of it passes with life, more still in the first hour of death, and afterwards what remains is but a pale reflection of the original.

And Outline.

The fish is built like a yacht, its *lines* are such as give it a turn for speed, lines that are so fine and delicate that the pencil does not seem able to reproduce them—they are lost in the thickness of the pencil line—and as it looks, so it is, a quick and speedy fish whose powerful tail gives it a propulsive force so as to make of its going through the water a flash rather than a rush. The forked tail differs from most in that each fan is able to work independently, adding thus to its moving powers; above the tail are five finlets, the mere rudiments of fins, almost too small for recognition, but doubtless serving a purpose, although at present it is unknown; these finlets are duplicated by five others on the under side between the anal fin and the base of the tail.

The fish owes its name to *macula*, Latin for spot, but the fish is not always spotted; there are three variations of markings—the barred, the scribbled, and the spotted. Some have thought them to have represented different families, but undoubtedly all are one, and the markings accidental; the barred is by far the most common, the others being quite exceptional, although to be singled out amongst a great haul. The colouring of the fish extends to the mouth cavity, this being also shining and iridescent, as with the sole, presumably with the intent of charming or attracting, or casting a spell over its prey—a procedure that might be useful to the sole, but one would think hardly of service to the fleeter mackerel; yet in world life the animal that is able to hold its victims spell-bound, such as the snake, has also remarkable rapidity of action and movement.

Mackerel as a Wholesome Fish.

The western fishermen have a saying that red mackerel is good mackerel, white mackerel is mackerel, and green mackerel is poison, alluding to the colours which are apparent below the pectoral fins and on the forepart of the body, and it has been said that it is the green coloured mackerel which sometimes disagrees with the eater, and not the rosy-red or the white.

The fishermen cannot have a great belief in the saying—for other people—for one never hears of them sorting the fish out according to colour, or being prosecuted for sending poisonous fish to market, although one has heard of a fisherman blaming the eater of the fish in the town who has not had sufficient sense to choose the colour of his mackerel aright and thus prevent the subsequent illness! The saying has as much truth in it as had the excuse of the Irish crew of a yacht, who, being all very bad in the morning, said they had "eaten mackerel which had been in the moonlight," but which illness had other causes, as have by far the great majority of cases where it is declared that, "it was the mackerel."

That mackerel is unwholesome is true, that is, it is unwholesome to *some* people, and to those people, it may be, only under certain conditions of body, in the same manner that crab, or other shell-fish, are poison to one constitution when a portion of the same fish interferes not the slightest with the health or comfort of another person.

Some few years ago now a scare was raised that mackerel was unhealthy in the summer months and should not be eaten; as a matter of fact, it is then at its prime. What *is* true is that being tender and delicate of flesh, it requires more than the usual care in its handling, so that it may reach the consumer in perfect condition.

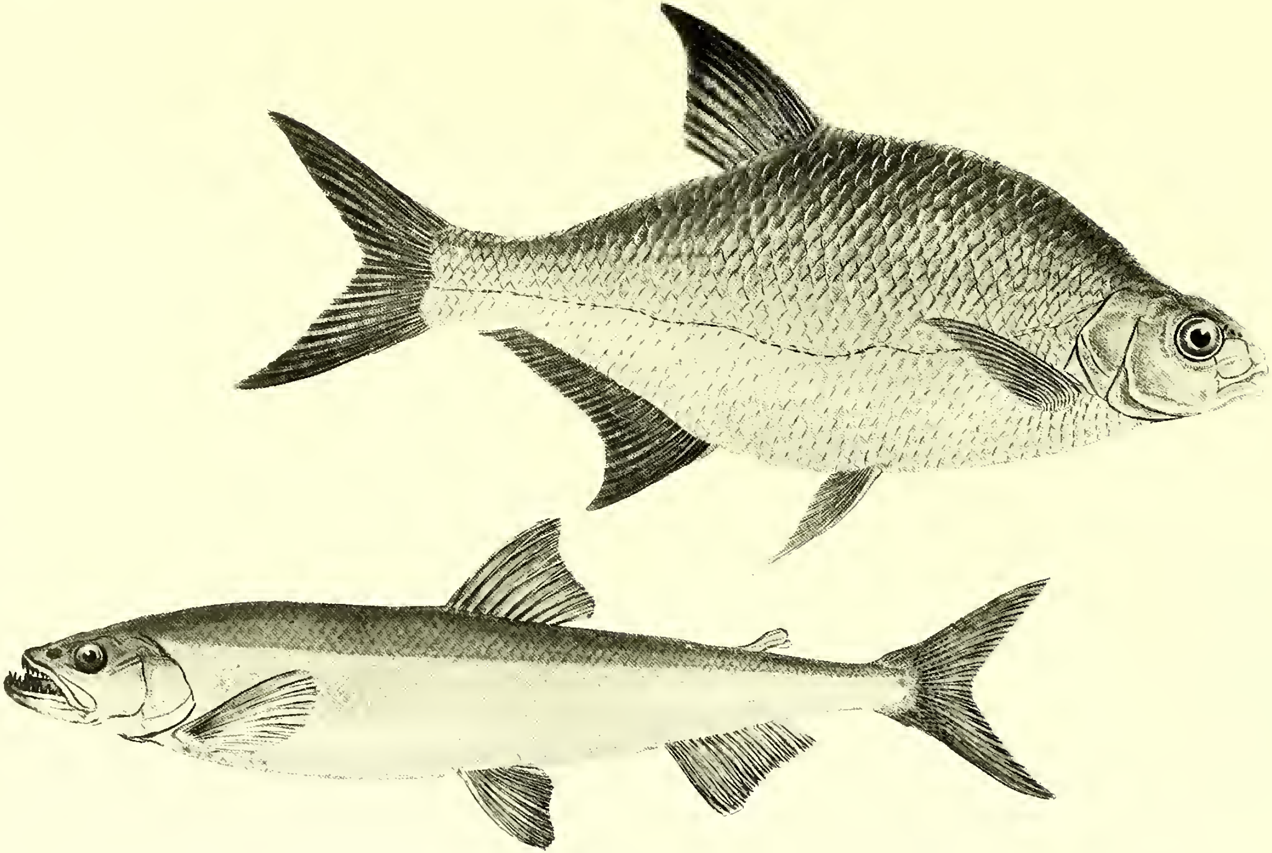
It is true also that the fish is subject at times to attacks of nematoids, thin, thread-like worms, but these do not make the fish unwholesome; even if some escape detection in the cleaning, the cooking destroys all life, whilst, as has been pointed out, the inhabitants of the Basque provinces actually collect and cook as especial dainties these *filaria*, believing that these parasites are young eels which have found their way into the bodies of the fish, foster children of their hosts.

Professor Huxley, than whom no greater authority can be quoted, ridiculed the idea that these nematoids were harmful, or that they had any effect on the fish in making them unwholesome. Said he, "The fish were none the worse for them; in the first place, they were not the same kind as those which infest man, and, secondly, the fish were going to be cooked, and although the idea was not pleasant, cooked parasite, *per se*, were not any worse than cooked fish."

The trader will, therefore, have a body of opinion to back him when he asserts that a thread-worm on a dorey or a smelt which has escaped removal is not unwholesome, neither an evidence that the fish is bad or out of season.

Spawning and Early History of the Mackerel.

The egg of the mackerel is of the floating type with one large globule of oil in it, and is barely one-twentieth of an inch in diameter, and when hatched its length is apparently one-fifth of an inch, the development taking six to nine days, according to the temperature of the water. By the autumn the fish would appear to have grown to some three inches. The stage of life known in Devonshire as *Joeys*, in Kent and Sussex as *boy*-mackerel, and in other districts as *shiners*, fish of eight or nine inches in length, are in their second year of growth — some eighteen months—which would bring the earliest time of maturity to two years, a period which accords with reason, although it has been asserted that the fish are mature at a year, but without proof to support the statement.



SEA BREAM.
SMELT.

Some of the Mackerel Fisheries.

The mackerel is common to all the coasts of Europe, from the southern end of Norway to the Canaries, penetrating the Mediterranean and sometimes the Black Sea, and occasionally passing beyond the Skager Rack into the Baltic.

The coasts of Ireland teem with it, Kinsale being the recognised centre from March to June and July, and Galway and Donegal Bay from June to November. Scotland is the country where it is found in least quantities, and possibly for that reason the fish has not there become the favourite that it is in other parts of the kingdom. The Cornish fishery is January to June, although it may be said to be somewhere in those seas all the year round, but the *right* mackerel, as the Cornishmen say, are those of January and February.

On the Atlantic coast of America it stretches from Greenland to Cape Cod, where it forms quite one of the foremost fisheries. In the warmer waters of South America the species obtained is worth little for eating purposes, being faint, bitter, and unwholesome.

Australia has its legions which give a large amount of line sport, but yield little of food value, possibly because of the difficulty of transport, whilst on the shores of India, at Malabar, it is a valued visitant.

The fish is prolific, the spawn of an ordinary-sized fish containing on an average half a million eggs, and this fertility, combined with its shoaling habits, that, in the main, make more for security than for capture, allow of the increase of the species, and the persistence which it is able to return, in quantity, year after year, century after century, to the haunts prompted to them by Nature and their own instinct.

"If a mackerel could speak it would talk Irish," says the Emerald Isle, but each country in turn in its season could say the same, and in these days when food stuffs seem always to be on the upward grade in cost, it is good to know that in the mackerel we have a fish that may be looked upon as a stand-by for all the generations yet to come, when it is possible that the sea shall yield an even greater proportion of the food of mankind than it does, or can, at present, a food which grows and increases whilst men sleep, and for which rents, other than the tolls which Nature levies, have never to be paid.

Statistical.

Before giving the details of the figures for the principal ports we append the figures showing the gross totals landed in England and Wales for the four years 1910-1913.

1910, 408,130	cwts.,	valued at	£190,294
1911, 373,357	,,	,,	£179,414
1912, 333,256	,,	,,	£167,007
1913, 345,095	,,	,,	£167,236

As in the case of the herring we have appended a schedule of ports with their landings for 1912 and 1913, extracted from the Annual Reports of the Board of Agriculture and Fisheries on the Sea Fisheries of England and Wales for those years; figures that, by their severance of details month by month, give the fishmonger the opportunity of readily knowing in which direction to look for his supplies—a matter this, that, however great his knowledge, he is apt to lose sight of, continuing his supplies from a district which has ceased to be the premier one for the time being, and forgetting an axiom of the trade that where the fish are in greatest abundance at any given time there they may be expected to be in the best and primest condition.

Quantity of Mackerel landed at each Station in each Month of 1912.

Extracted from the Report by Board of Agriculture and Fisheries on the Sea Fisheries of England and Wales for 1912.

Station.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.
Newlyn	1,144	8,151	7,511	25,351	31,626	5,564	183	17	..	56	..	..	79,603
Milford	1,741	5,767	19,043	28,630	14,524	29	..	6	9	72	14	4	69,839
Lowestoft	..	..	..	15	15,347	14,328	232	..	572	2,228	19,255	..	51,977
Grimsby	87	5	3	25	357	784	338	4,339	10,306	3,763	304	165	20,476
Folkestone	..	..	..	..	1,716	1,612	465	80	9,162	871	93	333	14,332
Yarmouth	..	..	..	65	5,186	5,844	49	..	..	..	..	..	11,144
Billingsgate	14	..	..	..	225	120	430	2,659	4,471	1,498	..	..	9,417
Hastings	..	..	..	47	2,228	2,575	1,800	16	1,227	33	8	20	7,954
St Ives	160	404	589	2,941	3,527	293	..	..	..	..	..	..	7,914
North Shields	157	102	263	296	643	1,570	1,214	1,063	319	245	281	233	6,386
Hull	134	22	92	55	..	44	..	128	1,134	4,433	80	175	6,297
Dungeness	..	..	..	36	425	908	1,124	78	3,107	51	..	..	5,729
Mevagissey	..	..	313	1,101	683	556	136	28	438	847	..	79	4,434
Penzance	32	56	248	979	2,399	..	..	..	..	..	..	..	3,714
Plymouth	75	..	15	360	483	1,244	30	69	140	105	550	..	3,071
Torquay	..	..	..	3	193	850	955	617	290	15	..	..	2,923
Abbotsbury	..	..	..	15	663	1,192	639	..	94	..	..	..	2,603
Blyth	20	..	65	25	54	..	..	247	865	216	10	43	1,545
Brighton	..	..	..	77	481	794	152	..	..	..	..	..	1,504
Dover	..	..	..	..	344	18	1,008	..	90	..	8	15	1,483
Portland	..	..	..	6	169	835	196	70	42	..	..	..	1,318
Fleetwood	..	..	..	13	..	..	47	..	722	431	..	..	1,213
Southport	..	..	..	..	..	190	931	1	..	..	..	..	1,122
Mousehole	..	..	32	439	97	104	..	289	78	..	..	..	1,039
Hartlepool	27	..	12	..	38	72	128	276	270	24	94	67	1,008
All other Stations	..	13	99	352	2,013	4,088	3,656	2,433	2,117	309	93	38	15,211
Total	3,591	14,520	28,285	60,831	83,421	43,614	13,713	12,669	35,453	15,197	20,790	1,172	333,256

Quantity of Mackerel landed at each Station in each Month of 1913.

Extracted from the Report by Board of Agriculture and Fisheries on the Sea Fisheries of England and Wales for 1913.

Station.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.
Newlyn	347	3,807	10,743	15,610	29,088	5,659	644	19	120	5	..	193	66,325
Lowestoft	..	..	..	20	8,389	5,363	275	28	87	1,520	32,349	13,211	61,242
North Shields	160	217	178	402	914	835	26,362	22,443	703	136	77	215	52,642
Milford	590	5,451	14,612	17,718	3,410	1	14	1	46	19	4	..	41,866
Yarmouth	..	..	..	26	4,551	3,023	80	..	..	..	5,400	2,787	15,867
Grimsby	69	60	76	260	1,555	1,526	3,286	3,414	1,412	1,909	794	185	14,546
Hartlepool	29	8	..	60	53	255	2,755	5,902	380	26	22	12	9,502
London (Billingsgate)	..	..	..	..	770	490	2,838	1,628	945	983	191	..	7,845
Dungeness	..	..	..	..	325	1,421	3,464	43	383	781	73	..	6,490
Hastings	..	..	..	..	296	2,782	3,108	..	74	44	19	..	9,323
Mevagissey	120	1,286	2,273	369	354	255	111	534	355	60	..	..	5,717
Blyth	96	144	88	58	..	33	..	5,194	68	..	..	..	5,681
Abbotsbury	..	..	..	..	1,191	560	876	619	129	..	..	..	3,375
Berwick	..	..	..	..	..	255	2,156	832	..	..	..	..	3,243
Folkestone	1	..	..	..	83	324	282	15	564	1,477	252	53	3,051
Torquay	..	..	..	1	431	1,196	471	332	418	134	30	5	3,018
St Ives	..	118	732	858	628	349	..	..	..	..	..	..	2,685
Hull	119	120	126	72	22	16	310	99	676	462	225	97	2,344
Wyke	..	..	..	3	667	635	278	60	187	17	..	..	1,847
Teignmouth	..	..	..	..	267	927	480	15	18	17	4	..	1,728
Sheringham	..	..	..	..	390	269	..	10	..	20	829	..	1,518
Burton	..	..	..	..	727	561	93	81	2	..	..	..	1,464
Budleigh Salterton	..	..	..	..	602	483	270	58	..	..	..	..	1,413
Southport	..	..	..	..	..	32	710	438	139	..	..	..	1,319
Portland	..	..	..	..	728	426	68	57	7	..	..	..	1,286
Plymouth	..	..	130	..	346	332	94	143	194	..	..	..	1,239
Brighton	..	..	..	..	62	652	270	..	115	40	..	..	1,139
Seaton	..	..	..	4	280	492	239	41	..	..	..	..	1,056
Brixham	..	..	..	..	250	633	71	21	23	5	..	..	1,003
All other Stations	22	303	814	548	1,736	4,575	4,568	2,948	1,511	760	586	40	18,411
Total	1,553	11,514	29,772	36,009	58,115	34,360	54,173	44,975	8,556	8,415	40,855	16,798	345,095

CHAPTER XV

THE LEMON SOLE

In speaking of this fish for men now at present in the trade the words "lemon sole" are sufficiently descriptive, but in other directions it is necessary to use the Latin appellation *Pleuronectes Microcephalus*, for the commercial term, as customarily used, is looked down upon, and where a common name is needed to describe the fish lemon-dab or smear-dab is used, whilst almost each locality has its special name, as the Mary-sole, corrupted to merry-sole, smooth-dab, bastard-sole, town-dab, sole-fleuk, sand-fleuk, and various others, almost without end.

From the scientific point of view the fish is not a sole, nor of the sole family; it approximates more nearly to the flounder, coming mid-way between that and the plaice in appearance.

The fish would appear to have become more numerous of late years, although this may possibly be because of the demand for the more ordinary varieties, with, in many cases, a lessened supply to meet it. Two or three seasons pass when not half-a-dozen of these fish are seen in the Edinburgh market, was said some thirty years since, whilst in 1903 the records of the Scottish Fishery Board give 26,611 cwts. as being landed in Scotland.

The habitat of the fish extends from the extreme north of Iceland and the White Sea, down as far as Arcachon on the west coast of France, being well known off the coast of Ireland also.

Spawning and Breeding.

The goodness of the fish depends very largely upon the time of its spawning in relation to the moment of catching. The female is said by Cunningham to shed its roe in successive lots, the production of which occurs at intervals. The fishmonger would be inclined to doubt the accuracy of this as applied to every individual fish, in view of the fact of the distressed condition of some which find their way to his slab, although it is to be noted that spawning is spread over a lengthened season, from April to September, and thus only a percentage are out of condition at any one time.

The lemon sole is a prolific fish—670,000 eggs being counted in one of 15 inches long—its roe occupying the cavity on the right-hand side of the fish, almost to the tail, and when this has all been shed, its out-of-condition character is very apparent, the flesh very readily taking up the taint from the gall and entrails, and assisting probably in the strong disagreeable tarry flavour with which the fish has been credited.

The Quality of the Lemon Sole.

In its prime condition it is a most excellent fish, lacking the wateriness of the plaice and the crumbly character of the sole, when filleted, and in its smaller sizes, whole, often doing duty with hotels and restaurants as sole, but always to be told at first appearance by its circular form as contrasted with the tongue-like or elongated shape of the better, or more aristocratic, fish.

The winter months — November, December, January, February, and March—may be taken as those in which the fish is in best condition, although, if the fish is in good order in any month, it may be relied upon as satisfactory.

The eggs of the lemon sole, which are buoyant, measure approximately one-twentieth of an inch, and take from seven to nine days to hatch out off the south coast, the time varying as usual with different temperatures. When first hatched the larvæ is nearly one-seventh of an inch in length, and would appear to favour deep water very early in life, having been taken when only two-fifths of an inch in 29 fathoms off the north-west coast of Ireland, and, at a length of one inch, in the last stage of transformation, from a depth of 80 fathoms off the south-west of Ireland, a remarkable depth for so small a fish. In complete contrast to this Cunningham records the taking of them, at from three inches to five inches, in a shrimp trawl-net off the coast of Essex, just outside Colne Bar, at a depth of from two to five fathoms.

The growth of the fish does not appear to be rapid for the first year, six inches probably representing twelve months' growth as a maximum, the greater number at that age not being above four to five inches.

Another remarkable feature is the smallness of size at which the lemon sole has been found mature and ripe. In the Clyde, female fish of $6\frac{3}{4}$ and $5\frac{3}{4}$ inches in length were quite ripe, the latter weighing only 22·6 grammes, and a ripe male of $5\frac{1}{2}$ inches in length, whilst two of $3\frac{5}{16}$ inches and $3\frac{7}{16}$ inches respectively, were approaching ripeness—this on the authority of P. Wemyss Fulton, F.R.S.E.

The fish does not grow to the limits reached by the plaice, 16 inches and 17 inches for male and female being south-coast maximum measurements, with 19 inches as the highest recorded in the North Sea.

Although so nearly allied to the plaice family, the lemon-sole differs from the rest in being without the spine or spike which comes to view—and touch—by the vent, at the beginning of the anal fin.

Some Statistics.

As showing the quantities taken, and the value of the fish, we give the following figures for England and Wales:—

In 1902,	41,575 cwts.,	valued at	£94,112
,, 1912,	59,057 ,,	,,	£140,972
,, 1913,	59,522 ,,	,,	£162,440

The figures for Scotland are—

1903,	26,611	cwts., valued at	£53,741
1911,	44,451	,, ,,	£84,011
1912,	40,818	,, ,,	£83,413
1913,	36,696	,, ,,	£83,472

In each country a steadily rising value being maintained, evidence alike of the esteem in which it is held and its growing value as one of the main food fishes of the fishmonger's shop.

CHAPTER XVI

THE HADDOCK

Many things have combined to make this the most generally popular fish in the market; its sizes range from the "chat" and "skinner" to the largest specimens, allowing a purchaser a range within which his needs are sure to be contained, thus giving the possibility of buying a complete fish as against the piece of cod, the fish which it most nearly resembles.

Its All-round Excellence.

The haddock is devoid of oil or fats, and therefore is appreciated by a number who cannot regard a herring or a mackerel with anything like pleasure; for boiling or baking it is more than good; fried, after filleting, it is excellent, whilst for drying, with either sawdust or peat, it is without a rival, as is quickly known should a codling or a whiting, in times of scarcity, be introduced as a substitute. As with most substitutes, these fish are sorry make-believes, and should never be sold in a shop unless with full knowledge communicated to the buyer.

The haddock shares many of its characteristics also with the cod; fresh or smoked one cannot be detected from the other by the large percentage of the public.

The Haddock in its Variations from the Cod.

The physical differences include the following—the haddock has scales of a marked character, as closely set and as effective a protection as those of the herring; the scales of the cod, as scales are ordinarily understood, are missing, do not exist.

The lateral line in the haddock is black, in the cod-fish, white.

The barbel beneath the chin of the haddock is very small, in the cod-fish it is long and flowing.

The edge of the mouth or lip of the haddock is smooth, having the appearance of a suction-living fish, whilst the cod has a formidable array of teeth on both top and bottom lip.

The haddock has the characteristic black mark in the skin, upon its shoulder, not always in one identical spot, being found well on to the first dorsal fin sometimes, and travelling down the other side of the fish, giving to some writers the idea that the haddock corresponded to the ass-fish of the Greeks and Romans, because, when the fish was so marked, it resembled the pannier straddled across the back of that animal.

The fact that the haddock is not found in the Mediterranean did not influence the idea or suffice to correct it in accordance with facts.

The cod-fish is without the black mark or spot entirely.

The Thumb and Finger Marks.

It is hardly necessary at this day to refer to the tradition that it was the touch of the finger and thumb of the Apostle which put a black mark upon the future life of the haddock, seeing that the mark is shared by the John Dory and the sea bream, and in a smaller degree by the whiting, not any of which are indigenous to the Sea of Galilee, and if they were, a black mark as the result of a good deed done would be but a poor return.

It might rather remain a matter of wonderment that the mark is continuous and persistent, and that the cod-fish does not acquire it, resembling the haddock as it does in so many other respects.

A Yorkshire Tradition.

But belief in superstition, especially religious superstition, is never logical; if it were, wonderment would cease, and faith would be refused. Thus it happens that yet another story exists as the reason for the markings of the haddock; it is from Yorkshire, where we might least expect to have our credulity imposed upon. The devil, in order to bother the fishermen, was building Filey Bridge, and dropped his hammer into the sea. A passing haddock tried to make off with it—evidently he was in league with the fishermen—but Satan was too quick, he gave it such a pinch that no haddock has forgotten it ever since, and each carries the bruise mark in memory of the encounter.

Yet Other Differences.

The colour of the cod may be taken as approximating to a yellowish tint when freshly caught, whilst the appearance of the haddock is of a tone approximating from a dark grey to a light brown, relieved as it is in line-caught fish with its scales of "shining armour," which add a tint of attractive bronze.

But whilst these colours predominate, there are exceptions, but only so few as to prove the rule; instances are recorded of a fish being of salmon colour, golden yellow with the lateral line white, and others of a light rose-red, but the writer has never met with anything different from the range of shades of grey as seen in the fish from the various latitudes of Iceland, Faroe, and the North Sea.

Ova and Eggs.

The eggs of the haddock are deposited in the same season of the year as the cod-fish, in the same districts, and, like them also, are buoyant, floating on the water or just beneath the surface; they are, however, of larger size, about one-sixteenth of an inch in diameter as against the one-twentieth of an inch of the cod — a difference which is maintained when first hatched out, although, in other respects throughout the larval stage, each closely resembles its near neighbour. The Norwegian naturalist, Sars, also tells us that, as with the cod, it seeks the shelter, in its early days, of the jelly-fish or Medusæ, and requites the hospitality or shelter given by feeding upon the crustacea which endeavours to feed upon the host, thus returning good for good.

Early Life.

As soon as it can glide alone it is off into deeper waters, having been taken with the net 15 miles from shore at a depth of 180 feet when only 1 inch in length. This was in July, and as the spawning time on the east coast of Scotland is February, March, and April, we may assume that the specimens thus obtained were then four months old, the time of hatching being given, according to an American observer, as about nine days.

The Habitat of the Haddock.

The haddock is to be found from Iceland south-eastwards through the North Sea to the Bay of Biscay, and south-westward around the coast of Ireland, and the fishing grounds at the mouth of the Bristol Channel, from thence straggling to the south-west of the English coast, where it is caught in small quantities and landed at Brixham.

On the south and south-eastern coast of the English Channel, the estuary of the Thames, and the coast of Kent and Sussex, it is never seen; the fishermen of Folkestone never find it in their trawls or nets, and those of Ramsgate but occasionally, and that only when they are fishing well northwards into the open sea, off or above Yarmouth.

Why it should be missing from the longitude of these few degrees of latitude when in the corresponding area westwards of England it is found, would be difficult to understand, although we may look for some knowledge on the subject from the exhaustive accounts now in course of preparation by the Marine Biological Association.

The Thames in 1593.

From a description, however, of the River Thames by Harrison, published in 1593, we gather that, besides the "fat sweet salmon daily taken in this stream, and that in such plenty as no river in Europe is able to exceed," the trout, smelts, bream, flounders, etc., the haddock also was to be found. Speaking of the winter flood time, when the river overflowed its banks, he says: "These land floods also do greatly strain the fineness of the stream, insomuch that after a great land flood you shall take haddock with your hands below the bridge, as they float upon the water, whose eyes are so blinded with the thickness of that element that they cannot see where to become and make shift to save themselves, before death take hold of them," and to substantiate his testimony of these things, says: "I refer me to them that know, by reason of the experience of their daily trade in fish, better than I."

Three hundred and twenty years have wrought many changes, but they have not brought, nor are the years likely to bring, the cycle again full circle when our salmon and haddock shall be abundant there, and the men who "daily trade in fish" know it better than any one.

The Haddock in Dublin Bay.

As we assume that a scarcity of the particular kinds of fish the haddock feeds on are missing from the Kentish coast and Sussex shores, and that therefore it keeps away from them, so we presume that the excellence of the fish caught in Dublin Bay is accounted for by the extra abundance of those things which form the haddock's chief delight, for undoubtedly there is a direct ratio between food and existence.

Dublin Bay, as a name, became proverbial when line-fishing was the only method of catching, and when, with every consignment of fish, there would come the knowledge as to the particular part of the coast which supplied it, but now that the trawl with its sweep is almost universal one never knows the area from which the fish is drawn; but the name survives mostly on printed price-lists, that are nothing if they are not stereotyped, and on tin or painted tickets, which say those things which the fish itself dare not say for itself.

Undoubtedly, the goodness of the Dublin Bay fish remains, although it has been erratic in its appearance and disappearance there, favoured spot as it has so long been.

About 1857 the spot was forsaken by the fish without any apparent reason, accompanied with financial loss to the men and boats engaged in their capture, nor was this the only occasion of their being missing from their old haunts.

The Trawler blamed for its Disappearance.

The long-line fishermen blamed the trawlers because the nets disturbed and caught the spawn at the bottom of the sea, but this was seven or eight years before Sars discovered that the egg of the haddock floats. The English naturalist, Huxley, pronounced that the spongy substances brought before the commission charged with enquiry as to the damage done by the trawlers, were really marine animals or organisms, and not spawn at all!

The haddock re-appeared, and in 1872 and thereabouts the fish, by one of the large smack owners in Dublin, were said to have again made their appearance on the old fishing grounds, and in pretty fair abundance.

Its more numerous shoals or quantities on the east coast may be attributed to the formation of the bottom ground which allows the fish, according to age and size, the choice of an area suited to it. Upon this hypothesis we must build the reason for its prevalence on the bank off the Yorkshire coast, some 80 miles broad by 3 miles wide, which is such a favourite spot, and gives to the Scarborough and Whitby boatmen the opportunity of fishing with line and of landing the live haddocks, which are probably the best fish which come to market, especially if they have been gutted before despatch, the quality of the food or the quantity of it being probably answerable for the rich condition of the fish, and also for the foulness that so soon declares itself in the stomach if the gut and entrails be left in.

The Diet of the Haddock.

The fish is essentially a crustacea and mollusc feeder, sand-stars and brittle-stars being amongst the chief of its foods, whilst shell-fishes—univalve and bivalve of all descriptions—are apparently preferred to fish of any sort. It is asserted that the stomach of a haddock is a place to look for rare shells, it being a common thing to find there specimens of a dozen different species, whilst the dryness of the flesh in cooking presupposes a diet made up of hard material.

The haddock occasionally will take a herring, these with the sand-launce and squid being used as bait as well as the mussel and pieces of whelk, but fish are the exception, shell-fish the rule, and that its destiny is to feed from the ground and on such things as are not very obstreperous in their resistance is shown by the drawing back of the under lip and the make of the mouth which allows it to be thrust forward and used still at the same angle for drawing or sucking in the food, the teeth being within the mouth to be used if and when required.

It is assumed that during the day the fish rises towards the surface, as does the cod, and that night is its real feeding time. It is then the trawl fishermen make their best hauls. For the line-men it is necessary that the time of laying the line should be at half-tide, and that they should then lay out their long trains of hooks, which in the old days, when long lining was in its prime, meant 4,680 hooks altogether on 180 lines, each line of 240 feet in length, and fastened into one continuous whole. In the comparative quiet of the hour when the tide is finishing, the hauling in — always a difficult business when so many hooks are concerned, and such valuable fish as either cod or haddock are being brought in-board—should take place with the least possible risk to either fishers or fish.

Trails or Trawls of Hooks and Nets.

Off the coast of America these long lines of hooks are known as "trawls," meaning trails, which word best describes the method of line-laying, although it must not be thought that they are trailed behind the boat; a buoy is attached at the end of each of the connected lines, and is the only anchorage, and the lines remain in position until the boat begins to haul them in-board at the appointed time.

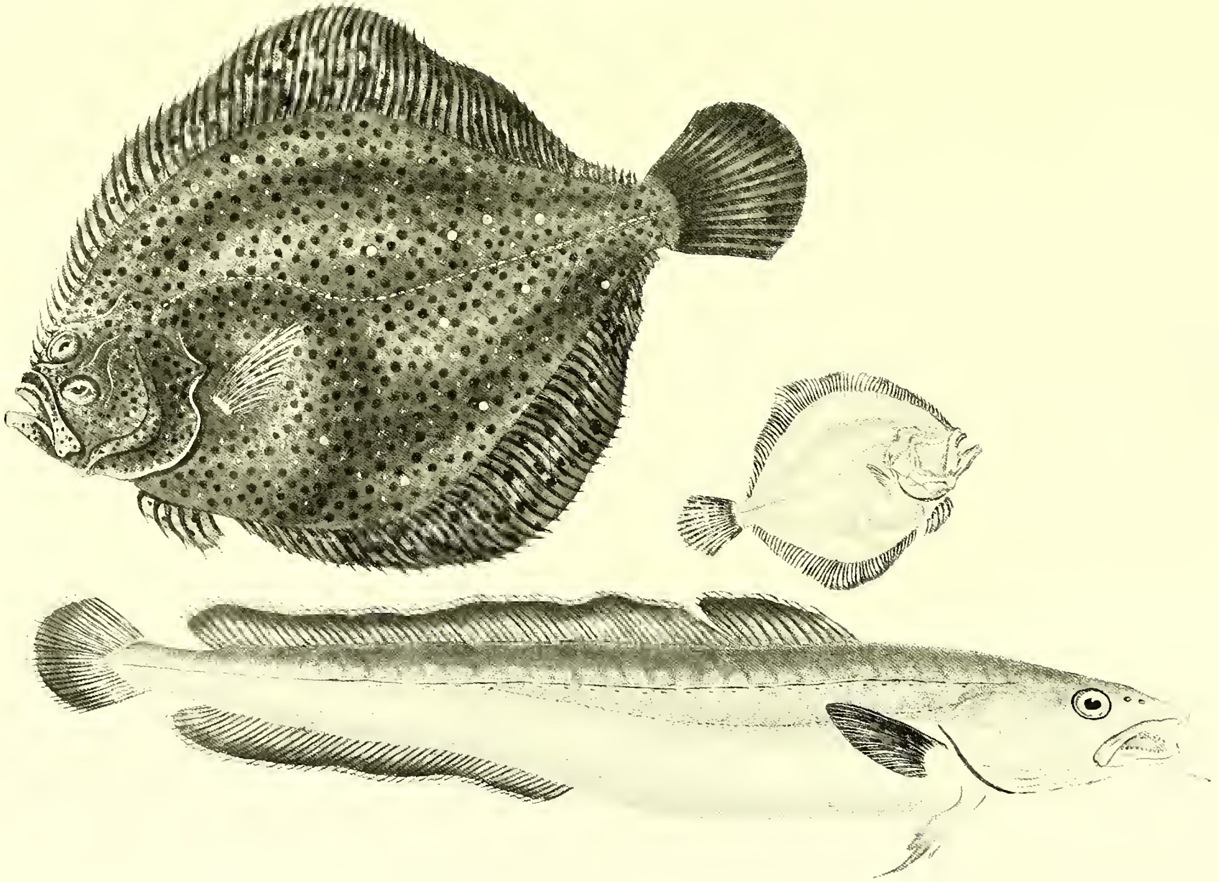
This explanation will suffice to guide the reader against making the mistake that when in the early years of the industry the trawl is mentioned, a trawling net of modern pattern is meant; it means a net trailed in a simple manner, usually through very shallow water, such as a creek or bay. When in due course the beam-trawl was developed the name took on a new phase of life, to be again altered when the otter-trawl appeared; three gradations as it were, but all trawl- or trailing-nets notwithstanding.

Line- *versus* Trawl-caught Fish.

Naturally these line-caught fish are of better quality for splitting, and for shopwork generally; the crushing and squeezing that happens in the trawl with the swirl of water going through it, and the crush of the *débris* which chokes in it, makes for a softer and much less presentable fish, although from observation and experience the line-caught fish, being better fed, are therefore inclined to break away when being used for skinning or for filleting.

Off-Season Fish.

The fish may be considered best for the table during the winter months and until they spawn, which time is not the same in all areas or districts. After March, unless they are not of sufficient age or size for spawning purposes, the fish are poor and limp, fibreless and flavourless; bad enough as fresh fish, they are even worse as dried for finnans — so much so that the fishmonger would gladly see a close time, or something approximating to it, and if it could be extended so as to include the spawning month it would be well for the trade and better for the fish. With the haddock the waste of possible life is great, but the waste of good



BRILL.
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fish is greater; the one is problematical only, but the other is certain and sure—so much so, that not a fishmonger with his heart in his trade handles a fish in shrunken and wasted condition without a shudder and a regret.

Scotland's Statistics.

It has been said of the haddock that it is over-fished, and that the supply is therefore giving out, but the records remind us that between 1896 and 1903 there was a cycle of years in which the quantity fell below the average, to be followed by another cycle of betterment that has now apparently given way to a reverse movement of the wheels, and may continue, we know not for how long.

This shortage will best be realised by the grouped figures given below. In Scotland there were landed from all sources of fishing—

In 1911, 1,071,020 cwts., valued at £529,431
„ 1912, 953,226 „ „ £575,957
„ 1913, 730,104 „ „ £549,711

an average price of 9s. 11d., 12s. 1d., and 15s. 1d. per cwt. respectively, and conforming to the trader's knowledge of the rise in prices, 50 per cent. in two years, although he would be inclined to assert that the sum of 5s. 2d. per cwt. difference, or 8d. per stone, all round, is considerably under the increased price that he has thought that he paid.

Line-fishing Figures.

It is interesting, further, to compare the line-fishing totals for haddock as set forth in the Scottish Fishery Reports, Scotland being the country where this method remains in fullest use. The figures are—

1911, 167,308 cwts., valued at £91,352
1912, 142,250 „ „ £83,384
1913, 84,940 „ „ £62,135

so that the decline in the time-old long-line fishing, which also includes the short hand-line method of catching, has decreased to one-half in two years.

Not all of this, however, is attributable to the shortness of supply; the steam-trawlers are gradually displacing the line-boats, the economic pressure being such that even the advent of motor boats into the line work has not yet sufficed to make the industry sufficiently profitable.

It is to be understood that the line-fishing figures given are not additional, but are comprised in the former figures which represent the bulk of haddock, from all sources, landed in Scotland in the respective years.

The English Statistics.

The same story of decline is to be recorded of the English fishing, or of the haddock landed at English ports, the total for 1913 being the lowest since 1904, although there is one cause for satisfaction. Taking the North Sea as a whole, the decrease of the total landings is least in respect of the largest haddocks, the medium and small suffering the most. The total figures for England and Wales are—

In 1912,	1,972,338	cwts., valued at	£1,350,188
1913,	1,553,869	„ „	£1,334,519

whilst the relative costs in 1911, 1912, and 1913 are 12s., 13s. 8d., and 17s. 2d. per cwt.

Singular indeed, but pointing out and emphasising how true to facts the figures are, it will be noted that 1911 and 1913 are each just 2s. per cwt. better than Scotland, whilst for 1912 the difference is 1s. 7d., an all-round increase in England and Wales, as against Scotland, of about 3d. per stone, the average extra cost of railway carriage to most of the large consuming centres.

Demand as Governing the Price.

Another fact which is worthy of notice, too, is that the return to the fisherman is nearly the same in each year, the difference to him being mainly that he has handled less fish for the same money; in fact, taking England and Wales with Scotland as one whole, the money is greatest in amount for the smallest catching year.

The demand has been, and is, beyond the supply, and prices are ever being forced higher, but the catching end of the business can scarcely be said to be suffering in consequence.

Another noteworthy fact may be given in passing, that whereas in the North Sea area in 1912 the haddock represented 37 per cent. of the total quantity of the demersal fish caught, the percentage had sunk in 1913 to 28 per cent. Future records will be looked to with concern, although the writer believes that again, as in the past, a cycle of good years will follow the present lean and unfavoured ones.

The Large Haddock.

The large haddock is perhaps not as justly esteemed as it should be, the customer being apt to consider it woolly and tough, and therefore unsatisfactory as a purchase, whereas the stability of the fish is rather the measure of its value and economic satisfaction to the buyer.

How to deal with it.

A method of dealing with the large fish is to fill it with salt, and sew the flaps together, after first well rubbing it into the backbone and the outside skin, and then to hang it up for twelve hours.

The haddock has always more flavour than a cod, and when a large fish is treated in this way and the salt afterwards washed from it before it is boiled, it is a dish fit for an epicure. It was a connoisseur whose instincts could be trusted, and whose practice could be followed with certainty of satisfaction who designed the method, himself always standing over the fish whilst it was well cleaned and scrubbed out, the eyes and scales removed, the fins properly trimmed, care having to be taken that the throat-strap was not cut through, never leaving the fish till it hung from a hook upon a rail in the shop, salted and waiting for the morrow.

A Baked Haddock.

A method of cooking which is not as common as it might be is that of baking a stuffed haddock, and a large fish lends itself very readily to this. The ordinary veal stuffing suffices, nothing more expensive is required; the flap of the fish is stitched up to keep the stuffing in position, a little fat is basted or laid upon it, and the baking finishes the work. Even for this purpose it is a decided improvement if the fish has been laid in salt for two or three hours. Smaller fish answer well under the same treatment, but the bones are as many in the one case as the other, and the larger and more virile fibres appear to profit most by the heat of the oven, and the treatment generally.

Record Sizes of the Fish.

Yarrell records the catching of a fish in Dublin Bay of 16 lbs. in weight; Couch tells of one of 25 lbs., whilst another, also from Dublin Bay, weighed 24¼ lbs. and measured 37 inches in length; but the record size and weight would appear to be of one caught off the Faroe Islands in 1914 that measured 42 inches in length, and weighed, after it was cleaned, 24 lbs.

The Prolific Haddock.

As showing the fecundity of the haddock a fish of 2¼ lbs. weight has yielded 169,050 eggs, whilst the ova of a fish weighing 9¼ lbs. has been computed at a little less than 2,000,000.

In addition to this liberal provision of Nature for continuing the species in spite of all the enemies to which the vicissitudes of sea-life expose and subject it, the haddock, in common with other fish whose eggs are pelagic, or buoyant, predominates in numbers on the distaff side, the female outnumbering the male, as 180 to 100, these being the proportions as found by lengthy research to hold good through the species—a balancing by Nature of the needs of the situation that does but require "fair play" on the part of man to give an ample supply to all futurity.

The Haddock always in the Danger Zone.

Unfortunately, it cannot at present be said with any certainty, that the haddock withdraws itself away entirely from those areas where the trawl can reach it during any part of the year; always it seems in its various stages of growth to be within touch of man and his devastating powers, but the result of the deliberation of the scientists of the International Council, and their investigations through a series of years, are now due, and from them we may hope to gather some definite knowledge concerning a hitherto abstruse or half-obscure subject.

Certain it is that the maximum of catching in the North Sea was reached in 1895 and 1896, the years which saw the introduction of the otter trawl-net; but there are good reasons for thinking that this was, in part at least, a coincidence, the fluctuations since certainly pointing in that direction, but the tabling of definite knowledge should solve this and other problems at present unintelligible.

The Finnan Haddie.

No history of the haddock could pretend to be completed which did not include a reference to the finnan haddie, the haddock which at first attained celebrity by its treatment as a smoked fish at the fishing village of Findon in Kincardineshire, a few miles south of Aberdeen.

As with the red herring, undoubtedly the intention of the originator was to find a method which would preserve the fish against the time when it was scarce.

Necessity, as the mother of invention, being no less nimble of wit in Scotland than elsewhere, the wood-fire that was smouldering on the hearth beneath a chimneyless roof to keep the Anglian warm, although, according to Holinshed, "their heads did never ake," had its counterpart in the peat-reek of the North Country, and the effect of hanging a split and salted haddock in the house was to impart to it the true peat-reek flavour, said to be the characteristic of the whisky whose distillation has been effected by the heat of the burning peat.

The Growth of the Trade.

The fame of the invention was noised abroad as the fishermen, each curing—or, rather, the wife and womenfolk—his little lot in the family kitchen chimney, where ere the "reek came out of the lum-head" it was yoked to useful service in preparing perhaps the most tasty, and generally welcomed, adjunct that can be offered at the breakfast table. The "wives and mithers" walked the countryside and town, carrying their cures with them. The tradesmen, grocers principally, sold the fish and rose into prominence as they began to send into other districts, acquiring a reputation for the goods which they themselves soon learned to cure. The reason this why the Northern grocer, according to Southern ideas looked upon as an interloper to the business, still drives a flourishing trade in finnans and dried fish generally.

The popularity of the fish became such that the homely peat-reek method had to be abandoned. The chimney and the living room became too small to cope with the demand, with the result that special buildings had to be erected, and other material used, which buildings had to be replaced by others, shifting to other centres with the incidence of fishing. No longer were the villages the sources of the supply; Aberdeen drew to the front with its increased landings, and to-day Aberdeen-cured finnans have replaced the village production, absorbing in the process the name, or a corruption of it, which name to-day stands as a generic word for dried haddocks of every character and cure.

Perhaps the most prominent amongst the impressions that remain with one after a visit to the north is the first sight of a peat-curing house in full blast and work.

The Peat-curing Hearth.

In the gloom of the building, the wide, and yet long hearth, more or less aglow with the peat, and reeking with the smoke of it in every sense, the fish hanging by one lug from the spits, gleaming or glooming, as the glow or shade from the tended fire fall upon them, and the woman attendant, for the moment sitting by, in the half-light, has the true Meg Merrilies stamp as the fitful flames brighten and die. From this weird, uncanny chamber comes a product of world-wide renown.

The Greatness of the Business,

From small beginnings the demand has grown until almost every town has its curing-house. With the gradual increase of values many of the smaller men have been prevented smoking for themselves, the consequent curtailment of the trade compelling them to purchase just such quantities of such sizes as their trade will enable them to sell without loss, escaping in this manner the charges for a resident smoker.

And the Result to the Small Smoker.

Every economic point has had to be considered; the extra cost of carriage of the head and entrails, ice in which the fish were packed, and heavy boxes, ice and water sodden, were a charge upon the business far in excess of the carriage-costs of the clean, light, dry boxes in which the completed fish is sent away by the curer who is able to turn the offal into money at his end, where it was too often a drag as well as a nuisance on the receivers' premises.

The art of the curer will tend more and more in the future than it has in the past to become a fine-art and a monopoly of the big man at the fishing port, whose convenience, especially catered for by market committees and Railway Companies, will place him in a favoured position to conduct the trade on a large and economic scale.

The Future of the Trade.

There are no figures extant as to the extent of the cured fish trade, but it might be safely said that of all the 2,250,000 cwts. of fish landed on our coasts from the Orkneys southwards in 1913, quite two-thirds were sooner or later split for finnans. If to this quantity were added the smoked fillets that posed as haddock, a gross total would be probably arrived at, in the neighbourhood of 1,750,000 cwts., a popularity which goes far to explain the assiduity with which the fish is pursued, and to account for the fact that the haddock stands second in our records year by year in quantities caught, and values realised, at the port of landing, values which are greatly added to by the outlays for wages and working expenses generally by the curers on the coast. In this manner, whilst it lags behind the dominant cod-fish in quantities, it yet exceeds it in importance in the amount of benefit which from first to last it confers upon the community at large.

Compared with the Past.

From this condition of things it is strange to turn to bygone years and to learn that at one time haddocks were almost worthless to the trawler from the want of a market, and that the large quantities which came up with the trawl in the 'sixties had to be disposed of with little regard to their value.

The idea of curing and smoking carried out long since on the Scotch coast had not travelled down, or the Englishman was slow to realise a good thing or feared the task of having to create a demand. Hull, however, made a beginning, and Grimsby followed suit, with London a good third, and it is strange to find the order of values reversed. For many years a haddock could not be satisfactorily cured in England outside of London, Grimsby coming next, with Hull a bad third.

The London "cut" seemed impossible to the port men.

Instead of a clean cut with a knife a clumsy jaggedness was the characteristic, and although many professed, and promised, to equal the Londoners' performances, they were not able until the London men were taken north.

Part of the failure, too, was due to the different construction of the smoking houses, it being thought that to do a big trade, such as being at the headquarters of the landing of the fish implied, a correspondingly large house was requisite, so that one was met with costly houses turning out poor goods, whilst the rattle-trap, narrow, chimney-like construction of the Londoner produced the best fish in the English trade!

One secret, probably, was that not only was smoke required but heat also, and this was better radiated from the wooden walls that surrounded every series of tiers of spits than when the same spits were just an integral part of one large building.

The trawl owner and the fisherman are sharers in the success of the scheme, for whilst in 1864 it could be said that the offal, of which haddock was the principal part, only realised 2s. per cwt., the price is now in the neighbourhood of 17s., and if a writer in 1874 could record a fish dealer's utterance that in consequence of the drying trade "Not a fish's eye is now thrown away," what might now be said when to the curing and drying is added the frying trade, with its ever-increasing demands?

This is not the page wherein to moralise, but truly it can be said, as the Latin proverb has it, they fish with a golden hook.

CHAPTER XVII

THE WHITING

An Unpopular Method.

In each of our sketches of the food fishes we have endeavoured to keep away from that mere scientific analysis which fogs the plain mind with big words, obscure references, and more obscure derivatives, and which, under the guise of knowledge, is yet so incomprehensible and ambiguous, that one must pass from writer to writer, from volume to volume, to learn what a shrimp really is and what its life history and values are, as apart from the general information that "they swim in the water, or lie upon the sand in shoals, and are taken in multitudes for the table."

One is more than ever reminded of this when, taking up a book intended to be popular, with the intent of finding out what the author has to say about the whiting, it is found to be necessary to know, first, that the fish belongs to the order of *Jugulares*, and that *Gadus Merlangus* is its classic name; from this starting-point one learns the number of the plate, and, as the volumes are of uneven sizes, finding it is no easy task, after which one is apt to regard the introducing paragraph with amazement more than amusement:—"The following systematic arrangement of the British fishes included in this work will serve more fully its nature and contents."

For ourselves, we have been constrained to say with Humphrey Gifford, "We needs must call a spade a spade," and each chapter has been headed only with the name in common use, whilst the substance matter has been such as is designed to inform, if not to educate—at least, not in the manner the term is too often intended to convey.

The Fish for the Delicate.

The whiting is without peer the invalid's dish of fish, and those to whom the doctor's ministrations are amongst the recurrent features of life recognise the period of convalescence as beginning when, for the first time, a whiting is permitted them.

It is a dainty fish, as becomes its name, a name it ne'er belies, providing the hours are not many that have elapsed between the landing and the eating. As drawn from the sea by hook and line it is of all sea fish perhaps the most beautiful; the scales which coat its skin are as a silvery sheen and covering, that is resplendent in the light, entirely different from the species raised in the trawl, or landed in the drift-net, all scored and scarred with the rubbing of the mesh and the swirling of the tide.

The South Coast "Live" Whiting.

In brilliance nothing can excel, neither can the same fish from any other part of the coast exceed, the splendour of those that come to market from the South Coast, from Plymouth to Polperro; "they sell themselves" whether at the salesmen's stalls in the market, or on the fishmonger's slab, and great is the dismay and contention if a short supply is more than cornered by those few giants of the London trade, who must have the "live" whiting or none at all, and to whom the price is but a secondary consideration. A matter of pride, too, that the manager is able to take home, it may be, ten to twenty boxes, and something to talk about also, but more especially at the end of the week, if only the tops of those boxes were culled over and used, whilst the balance, uncared for and neglected, fetched at the finish less than they cost, for even whitings have a habit of growing *down*wards through the box, and they could be quite as much an evidence of the millennium as Oliver Wendell Holmes's "Strawberries," were it otherwise.

Simple Wholesome Faring.

The whiting thus appeals to the delicate, and to those whose digestive organs are in the mood for simple fare, and the fish does not disappoint them; it is not in its nature to do so, for Nature intended, and provided, that for all time the whiting should live up to its reputation.

Some Reasons for its Excellence.

It will be interesting to follow up the reasons why. In the first place, the outside beauty of appearance also permeates the fish; a pearly whiteness distinguishes each flake, and the cream that lodges between; the silver skin, beneath the outer skin, is of an even more delicate shade than is its cover, and when this has been damaged by net or packing the silver skin is silvery still.

The quantity of fat is small, but instead of being irregularly developed, as in the flesh meats, it is carefully distributed, the bulk of the fat, as in the cod family generally, being comprised and compressed within the liver, a plan of Nature's own that they who are of stronger stomach may take their whiting fried and use the liver in and with the frying.

In taste—that sense which the invalid has usually the opportunity of cultivating by abstention—the whiting lives up to its delicate character; a pearly flavour seems to pervade the fish, sweet as a newly ripened Kentish cob-nut, gently soothing to the palate, and leaving behind that elusive or indefinable feeling, or rather longing, for "more upon the morrow."

A Closer Analysis of the Flesh of the Fish.

The ill, and the delicate, are not to be worried on the score of uneconomic eating, else might there be a cause for dissatisfaction that the whiting contains 83.0 per cent. of water, only one other among the sea fishes exceeding it in this respect, and that is the oyster. Singular to relate, these are the two which stand highest in their usefulness to men and women who feel that they are mortal by reason of their weakness and infirmity of health. The nitrogenous matter and the muscle-forming material is in the case of the whiting in excess of that found in the salmon, a fact which is but little known and less appreciated.

The Whiting at its Worst.

Another truth about the whiting, which is but a continuance of its *rôle* as an invalid's fish, is that it is least disturbed in its nature of all the fish by the action of spawning; it does not, like the haddock and the cod, put all its vitalities forth and lose them, becoming a mere wreck and a wastrel, useless to any one for any profitable purpose; more thin it may become, and does, but rarely is a whiting found to correspond to the hollow-back razor type of the haddock in similar case, and, further, the time of its thinness soon passes, and the whiting, like Richard, is itself again.

Its Early Life,

The ova of the whiting is smaller than that of the cod; before hatching out it is, say, one-twenty-fourth of an inch in diameter, and its pre-natal days are, like its fellows, spent upon, or buoyant beneath, the waves, a matter for wonderment that such an insignificant speck of matter should exist at all amongst the flotsam of a winter's sea.

After birth it retains the characteristics which make it difficult to classify, until, at about half an inch of length, it can be seen for what it is—a whiting developed from the larval stage.

Thus early in life it boasts a rudimentary barbel below its chin, which it retains presumably whilst it can be of service, the object of this appendage being for the fish to recognise its prey by the aid of this tender nerve-carrier. It has been noted that a fish, when blind, can yet feed on the worms which it is able to localise by the delicate sense of touch.

And Later History.

The after history of the whiting does not prove him to be a worm-eater only; the array of top and bottom teeth, sharp, and for his size effective, prove him to be of different character to this; he may still range, and does, the sands below, but it is in search of other food, as the angler may find out and the line fisherman knows. By no means refusing the lug-worm which some one else has caught, he is yet most often successfully wooed by herring, squid, or mussel.

The barbel fell away with youth when at three inches of length, since when he has become, not only voracious, but predaceous; everything is grist to his spike-like teeth, and the fact that he is found in dispersed *skuls* or shoals need not be taken as evidence of sociability, but as being animated by the common desire after prey. Small as he may be—six, seven, or eight inches—he will be found mixed up with the in-shore herring; not that he has anything to lose from them, but something to gain from their weaklings, or such as fall back from the nets maimed or drowned.

Adult Life.

In-shore is the place for the smaller fry during the early winter months, but it would appear that the elder ones have a greater regard for temperatures; it may be that the right development of the ova that they carry needs a more equable warmth, which is only to be found as they draw away into deeper waters, surface and shore temperatures affecting these hardly at all, it having been shown that off the coast of Norway, where the 100-fathom line is close in-shore, the temperature at that depth is consistent, within a few points of a degree, the whole year through.

We give this illustration from Norway because the fishmonger has some understanding of what the temperature must be on shore, when, during the succeeding summer, he will be handling ice from the Norwegian lakes that varies from eighteen to twenty-four inches in thickness. Later on these yearling whitings too will betake themselves to the 20-, 30-, and even 40-fathom depths, where they will remain for the remainder of winter and spring.

Beyond the 40-fathom depth the whiting does not seem to be found at all, contenting himself with swarming, during each year's cycle of living, over every available acre and area of water from the Scotch coast to the Mediterranean, but whilst small plaice from an inch upwards may be taken in the ordinary push-net of the shrimper, it is rare that a whiting is so caught, although the shrimp trawl at 3 to 6 fathoms may capture them in quantity.

The Dark Spot of the Whiting.

One feature of the whiting must not be overlooked, and that is the small darkened spot which occurs at the base of the pectoral fin, and sometimes almost on the lug or collar-bone, as though the fish had grown out of it, was on the point of losing it—in fact, an advanced position from that of the haddock, from whose back it is never missing.

Another point is that the two smaller fins are very highly placed in the whiting which gives the reason of its being classed as "jugular," from which it might be inferred that they are above the collar-bone; but this is not so, Nature, in fish as in human beings, keeping these means of movement which correspond in usefulness to the arms of men, beneath the collar-bone, from which position they are enabled to use the muscle-strength which gathers there.

Seasonability of the Whiting.

Perhaps November and December are the months of all the year when the mature fish is prime, a crescendo of improvement in quality being apparent with the beginning of the roe development, and reaching its zenith by about the end of the year. The months in which it is least to be appreciated are those of April, May, and June, although it is not to be inferred by this that all the fish are then alike at their worst;

the fact is, that spawning time spreads itself over those months, with a variant in favour of the earlier months of the year in the case of the South Coast, where February may be looked upon as the especial time.

Some Facts of Figures,

The quantity of spawn, in number, deposited by the whiting may be taken according to our present knowledge at half a million, and, as the females are double the number of the male sex, the contribution of these should be sufficient to replenish the stock, and, if we may judge of this by the records of the years, undoubtedly they do it.

And Statistics.

As in the case of the haddock, we extract the figures of the last years' catchings from the records of the Fishery Board of Scotland, which give us as being landed—

In 1911, 143,900 cwts., valued at £55,747
,, 1912, 173,992 ,, ,, £70,151
,, 1913, 223,745 ,, ,, £105,179

an increase of 50 per cent. in weight in two years, but showing the usual advance in value, this being approximately in the case of the whiting, 100 per cent.

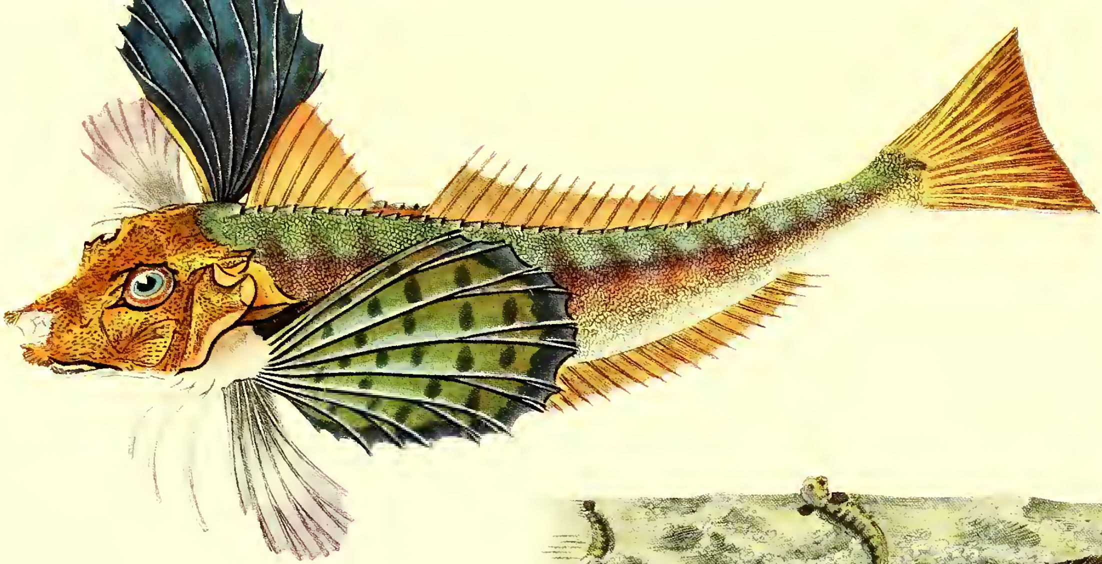
The English records give somewhat similar results. There was landed—

In 1912, 407,770 cwts., valued at £223,039
,, 1913, 427,262 ,, ,, £280,329

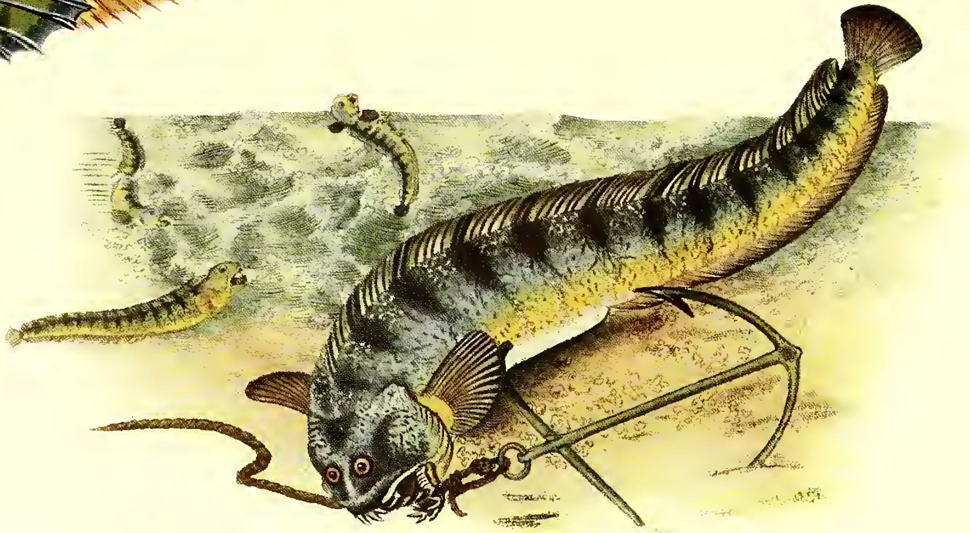
the increase in ratio of value being considerably greater than in that of weight.

The North Sea Area Fishings.

A noteworthy feature in both years is that the proportion of the total taken in the North Sea area has increased; whereas 76 per cent. of the catch in 1911 around England and Wales came from the North Sea; in 1912 83 per cent. was taken from it, to be increased to over 87 per cent. in 1913.



SAPPHIRINE GURNARD.



CATFISH.

London: Virtue & Co.

From this it is evident that the continuous trailing of the sea floor by the ever-increasing otter-trawl, has rather stimulated the growth, or prolific character, of the whiting; it may be by removing a larger proportion of the fish that hitherto has preyed upon it, but the fact remains, and it is common to both the English and Scotch coasts as regards the bulked totals recorded by each authority.

It is to be regretted, however, that the proportion that has fallen to the line-men's share has shown a backward tendency in the three years, comparing the first and last of them, the totals for Scotland being given respectively as—

1911	1912	1913
15,472 cwts.	19,210 cwts.	13,251 cwts.

The Line-men,

The figures for the English line trawling are not easily available, but we know that the growth there has been in steam-trawling and not in line-work, although it is to be hoped that the coming of the motor - boat, now making such rapid progress in the north, may enable our south coast fishermen, not only to hold their superiority in this fishing, but even to increase it. One does not view with pleasure the possible disappearance of the line-caught "live" whiting from the market and the scheme of the trade.

And the Motor-boat.

It is work that calls for more labour than does the trawl, which has not to concern itself with such things as hooks and bait, whilst the line-man must take with him, if he is to be successful, three to four thousand hooks, ready baited with whatever fish he best can handle at the time. The herring drifter will miss the useful contribution to his earnings which the line-man pays for bait, for when fish are scarce and squalls are plentiful, the few herring which come to shore will be bought for bait, and even the omnivorous Continental buyer, to whom no figures seem prohibitive, must stand on one side; until the bait customers are satisfied he cannot pay the price that the line-man can, and must, for his catch depends upon it; it is that or stand still, and this he cannot afford to do, nor will he be compelled to as often as in the past when once he is equipped with the handy petroleum motor which calmly chug-chugs away alike in storm and calm. That this fact is clearly recognised in the north, appears from the fact that during 1913, on the east coast of Scotland, the increase of motor-boats, intended primarily for line fishing, was over one hundred and fifty for the year!

Scotia leads, but where the lead is good Englishmen will follow.

Other Uses of the Whiting.

The whiting has not been widely put to other uses than the ordinary ones of cooking and frying; occasionally it is dried and sold as a poor substitute for haddock, but little of success has the method met. Customers do not ask or wish for it again; it lacks the body and bulk of the better fish, neither does it seem to take the smoke, or absorb it, so as to help towards a palatability. Probably the large amount of moisture in its composition may be answerable for this shortcoming.

The Whiting in 1670.

Willoughby, the naturalist, perhaps the first one to whom the term could rightly apply, whose work was in the latter part of the seventeenth century, tells of the fish being salted and hung to dry, presumably wind dried, and he tells also how the Belgians of his day coloured it an appetising yellow with turmeric, obtained from the curcuma root, much in the way that the dairyman is said in the twentieth century to give the milk the rich colour of the buttercup by the use of anatto, a perfect harmless colouring, and flavourless, which cannot be said for the turmeric, that is largely used by the Indian in the manufacturing of his condiments and curry powders.

The Dried Whiting.

The whiting is still dried, when salted, in the south-western parts, mainly, of England, and it may still be possible to evolve a satisfactory fish for other purposes than immediate eating, and as salt and drying increases the dietetic value of the cod, it may well be that a method with this as its base may be evolved, so that a fish of which the sea is not being depleted may find a sphere of further usefulness, even though we have to travel back through the centuries to find our inspiration.

The Whiting in Literature.

"The whiting knowne to all a general wholesome dish," wrote Drayton, before the days of Willoughby; whilst yet another of the same age had this to say: "It is easy of digestion and the nourishment which it maketh, if little, is good. The younger and smaller are more sweet and pleasant, and give the best nourishment." We may not agree with the last clause entirely, but we conclude with a word of even greater praise, that whether large or small, he is a most excellent food for delicate palates, and, further, that scarcely one of us but has at some time or another had, with Lewis Carroll's snail, to "thank the whiting kindly" for the benefits received.

CHAPTER XVIII

THE MULLET

A Phase of Roman History.

THE gladiatorial displays of Rome, marking, at once, her splendour and her fall, have their counterpart in another direction, in the worship of a fish. In the former, physical development, art, and skill were exalted to the highest pitch, whilst the brute instincts, and the tongue, of the onlooker were aroused, and had their utterance in "the inhuman shout which hailed the wretch who won."

With this went, hand in hand, the degrading of the appetite to an extent probably unknown before, or since, and of this demoralised condition of ignoble life the mullet stands ever as the sign and symbol.

The affectation of wealth, the insufferable vanity of the *nouveaux riches*, vied with the Cæsars in their display of the live fish, procured at enormous cost for the following feast, whilst the fish itself divided, with the Cæsars, the allegiance of the populace.

The "woodcock of the sea" is an estimable fish, we agree, yet fail to see, or realise why, it had such hold upon Rome as to be a phase, a last phase, in the life of a once great nation.

Mullomania.

As mullomania one writer has described the mental malady which thus affected "the grown-up children of the higher ranks, all Rome's great men and mighty men and councillors of state; all her citizens of trust, taste, and tone; prince, premier, and philosopher, poet, painter, and pimp, parasite, parvenu and purveyor were, with few exceptions, confirmed mullomaniacs."

But the mania was confined to those circles of pretentious wealth or profligate insolvency. Two lines of Juvenal declared—

> "Men their throats of mullet must amerce
> Who'd scarce a gudgeon lingering in their purse,"

else might the whole population have been shipped off to Anticyra—the Colney Hatch of Rome—with advantage to the State, and probably to themselves.

> "Arouse, ye Goths, and glut your ire,"

is Lord Byron's concluding comment upon the depravity of the gladiatorial show, but mullomania wanted not for lashings with the pen of able men whilst yet it ran its course—all to no avail.

Martial with his *Epigrams*, Juvenal with his *Satires*; Suetonius and Seneca, Pliny, Oppian, Jovius, these and every other historian and moralist of the era ranged themselves against the gluttony and viciousness, but, for once, ridicule lost its power, and what it failed to do was reserved for the Goth and Hun to accomplish.

The Cost of the Mullet.

To pay at the rate of 5s. per lb. for mullet in our day is not an unknown figure; it is recorded that a sum equal to £240 was paid by one luxurious sybarite of Rome for three fish!

Sums of £50 and £60 were common expenditures for a single fish, the epicures contending with each other as to how the meal might be the most expensive, one, Heliogabalus indulging his *gourmet* fancy by arranging a dinner made from the barbels of the mullet alone — fit accompaniment this to the famous dish of peacocks' tongues which also dates from this decadent era.

Art and the Fish.

It must, however, be admitted that if Art be the love of colour, and to some extent it assuredly is, then the animalism of the banqueters was redeemed, in part, by the handing around, in a great glass bowl, of the live fish, revealing the resplendent colourings which glowed to finer tints, and greater brilliancy, as the mullet gradually died in the presence of the expectant feasters, when, the first part of the entertainment being completed, it was handed over to the cook to prepare for the feast which followed.

A Mullet as the Price of a Slave.

It must remain for the historian and moralist to make the deductions ; it is for us to mark the facts as they constitute a part of the history of the fish for which this chapter is set apart, and in pursuit of this duty we will quote, concerning one Calliodorus, the anglicised version of a versification by Martial :—

"Thy servant thou for a great sum did'st sell
That, but once, Callidore, thou might'st fare well,
Nor far'd'st thou well : a mullet of four pound
Was the head dish that all the table crown'd.
May we not, wretch, exclaim against thy treat ?
Say, 'twas a man, not fish that thou didst eat."

The slave had been sold to a new master, that the old one might have the money to expend upon—a mullet.

Of yet another gourmand the same writer declares :—

"Lampas when he's gorged and swill'd
Till his paunch is over-fill'd,
Still contrives within his gullet
To keep a corner for a mullet."

The Goddesses and the *Vivaria*.

"Dull as a mullet" was a proverb with the Romans who yet consecrated the fish to Diana and to Hecate, the huntresses, in virtue of the repute that the mullet hunted the sea-hare, although "its docility, sensitiveness to sound, and personal attachment to its owners" belied both the proverb and the repute, and assuredly neither of these mythical goddesses could be classified as amongst the dullards of the earth.

The pride of the *vivaria*, the rock-hewn aquaria, to make which enormous sums were spent, was in the mullet that could be taught to come and feed from its master's hand, but, as Columella, who has been already quoted, writes: "Only one here and there out of many thousand can bear confinement;" success in rearing them would mark an ability of a very high order, however unworthy the object towards which it was displayed.

The Mullet in Captivity.

The modern, with whom the gold-fish in a bowl is a matter of amusement for children, can scarcely realise the frame of mind such as that of one Hortensius, who had fish ponds constructed at great cost at Bauli. We give the translator's transcription concerning the fish and their owner:—

"I have often been with him at his residence, and I know that when he wanted fish for dinner he would send all the way to Puteoli and buy; he used to feed the fish with his own hands, and would show a great deal more anxiety if his mullets were hungry than I am wont to do when my asses want feeding. I am content with one slave to feed my asses (which cost a lot of money) with a moderate allowance of barley and pure water. Hortensius employs a host of fishermen who are everlastingly sent out to catch heaps of little fish for big ones to eat. If the sea was rough he would buy salt fish from the market and throw them into the ponds. He would much rather give you one of his carriage mules out of his stable than a bearded mullet from his pond; he felt much more anxiety about a sick fish than a sick slave, who was not worth a thought, provided only his fish had cold water to swim in during hot weather."

Thus it will be seen that the red rover of the fish ponds was in happy circumstances, although there is no doubt he would have preferred the sea, the open sea, to all the blandishments of Hortensius or his like.

The Name of the Fish.

The mullet was, and is, an inhabitant of the Mediterranean, the Adriatic, and the Black Sea, and the cry in the streets of Naples and of Rome to-day of "*Trigle vive! trigle!*" is the sign that the fish has not changed its quarters or forsaken its old haunts since the days of Cæsar.

Whence its early name of mullus we know not; authorities disagree. The *trigle* was given it by the Greeks, it being said by them that the fish bred three times a year, but we in England hold to the Roman name, containing, as it does, all that is necessary for a matter-of-fact nation, that does not usually look to fable for inspiration, or for the label of a fish.

The English Supply.

The finest fish and the greatest supply come to us from the south-western part of the English Channel, where, from time to time, great catches have been made by the drift and the trammel net, the catchers attaching great importance to the colour of the fish as it left their hands, and for this purpose the scales were scraped away before the mullet was dead, the effect being to bring out the pigment in the skin to a deeper, brighter shade of satin-red, "the process causing the permanent contraction of the red pigment contained in the colour-cells or chromatophores distributed over the surface of the body."

The Catching and Care of the Mullet.

To-day a much larger proportion is caught with the trawl-net; and these, having the scales already removed by the bruising and brushing through which they pass, come to market as they are landed. The fishmonger then does his best to heighten the colour by washing them in salt water instead of fresh, and should they be packed into the ice-chest, wrapping each fish separately in paper, so as to prevent the percolation of the water and the drainings from the ice from coming into contact with them—a necessity which is often forgotten when, the fish being upon the slab for sale, the fresh water is thrown promiscuously over all whether they be red-fishes which bleach under the treatment, or others which do not so much matter. In passing, let us remark that for all washing of fish, and especially when it is upon the slab, a little salt should be mixed with the water used.

Concerning the Fish Seller.

The fishmongers of Naples are charged with painting the gills of their *triglia* red and varnishing the outside of the fish to deceive the English visitor and buyer, but one imagines the charge to be as untrue as it is absurd, a tale believed by one whose idea was that the community is all entirely honest and simple, with the exception of one small section, that which composes the fishmongers and fish dealers in it.

The Mullet and the Surmullet.

The earlier writers and natural historians believed that the mullet, as found in European waters, consisted of two species — the red mullet and the surmullet — drawing a distinction between the fish; the smaller is of a dull plain red, the larger has three to five longitudinal stripes and more vivid reds and resplendent yellows intermixed. Later investigators incline to the opinion that both are within the limits of the variation of the one species. To the ordinary trader—the man who is apt to gather his knowledge from observation and contact alone—it would appear that there is, of British fish, but one family, and that the variations proceed from the development of age effecting a change in the colouring of the skin, if not of the scale.

The Variations of the Species.

The profile of the head of the mullet is a distinguishing feature of the species, the angle varying in different specimens, but all inclining to the right-angle or the blunt obtuseness which approaches the vertical; but varied as this angle is in diverse fish, the shade of difference betokens nothing except that Nature has created a type of fish, that, like the human species, varies in its frontal presentment, and perhaps in intelligence also.

The Uses of the Barbel.

All are alike in possessing Nature's equipment of the barbel, the sensitive feelers beneath the lower jaw with which the fish, in depths or positions where the eye may be of little value, is able to find its prey, the worms and other small fish that provide it with the means of life. It is not necessary to assume that the barbel exists to supply what is lacking in an imperfect eye; we should rather credit the fish with possessing an organ adapted for a purpose for which the eye would be useless.

A handful of live shrimps thrown into an aquarium tank where mullets are being reared will illustrate the difference in use of the two organs of sight and feeling.

The crustaceans bury themselves in the sand, and to find them the eye would be useless; but the fish will systematically tap each inch of the sandy floor until every shrimp has been dislodged and eaten.

The Food of the Mullet.

The fish thrive in an aquarium where their wants in the shape of food are understood and supplied, and from this knowledge it would appear that the mullet is not the foul feeder which it was always supposed to be, but rather the reverse. It is certainly a matter of common knowledge with those in daily contact with the fish that the contents of the trail are not of a putrid character;

were it otherwise, the cooking of the fish unopened would hardly have obtained, and remained, through many centuries.

The Cooking of it.

An early mullet enthusiast, to the question, "Why do you pay so high a price for mullet?" replied: "The head is one good reason and the liver a second." To-day the head is accounted valueless, but the liver retains its hold upon the epicure, who, if he be of the true sybaritic order, would prefer the liver without the fish to the fish that was served without the liver.

As the red mullet acts as an enclosing case to the liver conserving and enhancing the *bonne bouche* for the epicure, so the paper case in which the fish itself should be enwrapped whilst cooking preserves the delicate flavours of the fish from being destroyed by the heat of the fire, an exactly opposite method to that of cooking the red herring, which a modern enthusiast declares should be placed over glowing coals until the skin has caught fire as the result of the falling of the fats from the fish, the flames and heat adding in the one case that which they extract in the other.

Concerning Sauce.

Without sauce of any sort except the gravy that remains after cooking in the paper wrapping—which should first be lightly buttered—is the correct method of serving the fish. It is its own relish, and only a perverted or jaded appetite would seek to smother or to serve it, with a concoction which, if good, should stand alone, and, if bad, should not be allowed to sully the fair flavours the mullet brings to the table with it.

That "the sauce is better than the fish," as the French have it, is true only of some fish, and those presumably which are of interior lakes and streams; a country with a continuous seaboard does not accept such a proverb, and least of all, apply it to the woodcock of the sea.

"The Sauce of the Allies" was the name given to one expensive concoction in which a Roman, who spent a huge fortune on his appetite, drowned his mullets with the beliefs that he enhanced the flavour thereby, but history does not allow that the method was a success, except as a means for the speedy dispersion of sestertium, or cash.

The Mullet as a Fish Course.

As an early course in the dinner the mullet is a prince amongst fish, but even a moderate diner of to-day would think ill of the invitation to a banquet where, though the fish was expensive and possibly large of its type, little or aught else was served for or with the meal, except the loquacity of the host setting forth the pride of his possession with which he was thus regally regaling his invitees.

Localities where Caught.

There are about forty different species of the mullet, but only the two—or one—are known in European seas ; the remainder are mainly tropical and do not concern us here. More to the immediate purpose is the fact that they are found somewhere around our coasts at all seasons of the year, occurring off Cornwall in larger quantities at a distance of twenty miles in March, coming gradually to the nine or ten mile line by May with the mackerel, their somewhat roving disposition dispersing them, possibly for spawning purposes, so as to make their occurrence thereafter erratic, uncertain and spasmodic, this fact contributing not a little to their exceptional dearness at certain times.

Statistics of the English Mullet.

Contrasted with the stupendous figures of the more popular varieties of fish that have been already dealt with, the red mullet makes but a poor showing.

The quantity landed upon the

	East Coast	South Coast	West Coast
	Cwts.	Cwts.	Cwts.
In 1912	1	68	254
„ 1913	7	42	173

with a total value in each year respectively of £910 and £723, representing by far the lowest bulk and the least total of all the fish which the Board of Fisheries tabulate yearly in their Report of the Sea Fisheries of England and Wales, leading one to the reflection that were the herring or the sprat to change places as regards numbers and commonness in all vicinities they would hold the pride of place with equal honours from their devotees.

CHAPTER XIX

JOHN DOREY

The John Dorey.

Why "John"? The question has often been asked, but never answered, except by assuming a far-fetched resemblance to the French *jaune doree*, golden yellow — an altogether impracticable solution, and one which is as devoid of probability as that it comes from *Janitore*; said to be the Venetian name—where it is connected with St Peter, the saint with the keys, and, therefore, the fish was co-keeper of the door of the better world, or the three worlds, which the three keys signified.

John Quin and the John Dorey.

Others, again, attribute the name to the partiality with which it was regarded by John Quin, the actor of the middle-eighteenth century, whose residence in Bath made it possible for him to bring the dorey into vogue in higher circles. He himself would go to great lengths that he might enjoy his favourite fish, even to providing sea-water, in which, he averred, it should always be cooked. A lively description is on record of a carriage ride from Bath to Plymouth, taken that, with a friend, he might enjoy a week in the district where the fish was to be had in the greatest perfection, and of the return journey, a barrel of sea-water strapped to the *diligence*, so that he might enjoy yet another feast of his favourite fish on the homeward route—an expectation that was to be disappointed.

Out of compliment to one who had done so much for the fish, Quin's Christian name was attached to it, but, plausible as this may sound, the derivation is more likely to be from some fisherman's freak of nomenclature or fishmonger's pleasantry, in linking *John* Dorey with *An*-chovy!

Speculations apart, we know the name to have been Dorey only in 1650, and also in 1666, so that the John is of the later centuries, but by whom first used, and where, research has not yet found out. Professor Skeat, perhaps our foremost etymological exponent, being unsuccessful in his endeavours to that end, but uncompromisingly refusing the French origin of the nomenclature.

Traditional.

The John Dorey has always had associates of the highest orders. The Greeks allied it with Zeus or Jupiter; Rome, as we have seen, gave it fellowship with St Peter, whilst tradition attaches it to St Christopherson, and explains the black coronal mark upon it by the saint's touch, whilst others affirm it as the outcome of the finding of Peter's pence, but, as the fish is not, nor ever has been, a Galilean, that explanation must fall by default.

The Ups and Downs of the John Dorey.

Like many another of obscure derivatives, the course of the John Dorey has been a wayward one; it has soared, time and again, into the best of surroundings and society, only to fall again into comparative obscurity.

Couch had a manuscript note written by a country gentleman in the mid-eighteenth century, complaining that John Doreys are seldom seen, and when they are, are extravagantly dear. "Dorys yt used to be sold for 3 or 4 pence a piece (Mr Collins remembers them at 2½d. since his time), are now two shillings, or half-a-crown, a good one."

Since that day they have fallen again in estimation and in price, to enjoy once more, through Victorian days, a well-deserved repute in an era when 7s. 6d. was no uncommon charge for the fish which epicures have ranked, for boiling purposes, as being next to the turbot itself—periods of affluence these when the Ovidean term of *Rarus*, applicable to its quality, was justified, as was the assumption that the name was from *adorée*, the worshipped; but, alas, dark days have fallen and clouded a deserved reputation! No longer a stylish fish, it figures in the market quotations at something like 4d. per lb., whilst the Returns of the Fishery Board give the wholesale landing prices for the year at £1 per cwt., or 2s. per stone.

The John Dorey as a Food Fish.

And yet an acknowledged authority has dubbed the dorey as one of "the most valuable of food fishes, seeing that it required no sauce to make its qualities apparent or to develop them," an evident opportunity thus presenting itself to the fishmonger for introducing a now little known fish to the many whose choice is naturally the turbot, and yet demur at the turbot's price.

The Dorey as an Economical Purchase.

Many a would-be customer takes offence at the ungainliness of the head, whilst others complain of the waste in buying a fish with such a large proportion of useless bone. The truth is that relatively the head and gills weigh less than that of the turbot, and the price is usually one-half, or two-thirds, at the utmost, less, in proportion, if the turbot happen to be a female fish in full spawn, and those whose judgment may be relied upon declare the flesh of a fair-sized dorey to be, in its way, as delicate and as good as the higher-priced turbot, and certainly superior to the brill.

Its Natural History in Brief.

The dorey differs from the flat fish we have already written of, in that although flat it is an upright swimmer, having an eye on each side of the head, and being coloured alike on both sides, a lazy swimmer some have termed it, as it has the habit of drifting with the current, and if in the vicinity of rocks, resting its body slant-wise against them; the writer would acquit the John Dorey of this charge believing these are mannerisms assumed for the purpose of preying upon its fellows, for when once an unwary fish is within reach of its protruding head no chameleon's tongue is quicker in movement, no lion's paw more swift in its destruction.

For feeding purposes also it may be assumed that the fish does not congregate in shoals. Such voracious eaters would scarcely find sufficient food were they of gregarious habit, for the obtaining and retaining of food would seem to be the purport of their life, living to eat, if one may judge of the quantity and the description of what is found within even a small specimen fish whose extensile jaws have not been given, or used, in vain.

"The Stalker of the Sea."

The Greeks would seem at one time to have used the word *chalceus* as descriptive of the fish, because of its likeness in colouring to brass or bronze, and to this protective coloration much of the skill of the fish in its fishing must be attributed. It will be noted that the second dorsal and anal fins are both of them soft and wavy, and by gently moving these in a sinuous manner the fish is able to maintain an almost moveless posture, some averring that the long filaments at the extremity of the first dorsal fin are dangled in front of the capacious mouth in similar manner to the wile of the angler fish, the expected prey investigating the worm-like appendage finding itself lost, a victim to its own curiosity or need of food.

"The stalker of the sea" might well be given the dorey as a descriptive name, for, next to the shark tribe, few fish are more relentless or less easily satisfied, its thin and muscular stomach walls easily accommodating all that the extending jaws can clutch.

Reference has already been made to the pairs of fins, one fin composed of spikes and one of soft and wavy substance being in position as dorsal fins, and one of each as anal fins; at the base of these are ridges of spikes, or thorns, accounted dangerous as poisoners, when they pierce the skin with full effect, their occurrence leading, doubtless, to the origin of the fishmongering practice of cutting below them and removing the spike-ridge and the fin before sending the fish out, leaving it in appearance like a whiting whose fins are removed, but whose skin is left intact.

The Habitat of the John Dorey.

The fish is found throughout the Atlantic, and some variation of it is obtainable in almost every open sea, but the prince of all would seem to be the fish that is caught in the English Channel, where it has been obtained up to 12 lbs. in weight, although 18 lbs. has been mentioned as an occasional maximum.

The fishmonger will know that its food consists of whatever is swallowable, an occasional stone being found amongst the contents of the stomach of the fish, which accounts "all as fish that cometh to net."

The John Dorey has yet a future in front of it, which the fishmonger can help to bring about; it is a right good fish, doing justice to its recommender and to those who will brave the freaks and fancies of fashion, and welcome it to their tables as did their grandparents of fifty years ago.

CHAPTER XX

THE GURNET

The Fish that Walks and Flies.

This would be a popular description of the gurnet, although not strictly true, for the legs with which it progresses upon the floor of the sea are really fin-rays, three on each side, forming a part of the breast fins, but not joined together with a membrane as are the remainder, and in this position correspond more to the fingers of our hands. Such means of progression as they are allows the fish to move forward or backward at will, the retrogressive movement being aided by the folding down of the dorsal fins into a groove prepared for them, without which some danger might be incurred by the spiky fins coming into contact with rock or stone or other under-water obstruction.

The gurnet family as a whole would appear to be but indifferent swimmers at best — which is probably the reason for the development of the "fingers and wing" which distinguishes them, both of these being parts of the pectoral fin.

The excess of wing—that member which is featured by the fishmonger's assistant who outspreads it fan-wise above the head of the fish—connects it with the flying-fish of the tropical seas, and in our own seas it emulates the skill of its greater developed relative.

Distinctive Characters of the Gurnet Family.

Probably for protective and not for spectacular purposes is this art of flying conferred upon the gurnet, although a beautiful sight must the sapphirine gurnet present, when, with its "fins vying, as a whole, in brilliancy with the resplendent wings of the most gorgeous tropical butterflies," it takes its short flights in summer weather above the surface of the water, or as may be noted in an aquarium, when frightened or disturbed it waves them around and above its armoured head.

Another distinction of the gurnet family is this armour-plated head — all the flesh upon which is poison, as is colloquially told concerning it; the fish which by its "legs" or "fingers" is continuously prowling amongst rocks and stones, is given by Nature a head of Thor, which scarce a hammer blow could break, and yet another is the muscular air-bladder or rather gas-bag, which is a part of its equipment for the stress and pressure of life as it is lived in the depths, and by the manipulation of which it is enabled to come to the surface at will and without harm.

The Fish that Croons or Croaks.

The gurnet is known in Scotland as a "crooner" or "croonach," the fish that croons or croaks, it having this power by virtue of the stored-up gas which it emits at will. Some think it a form of communication between the fish, but sufficient evidence is not forthcoming that the noise is as perceptible below water as it is above, and the reason of its existence would appear to be met by the explanation already given, and the fact that the noise is apparent as the fish is taken from the water, bearing out the assumption.

Yet another peculiarity in the sapphirine or "tub" species is the broad, flat breast, bone-protected, which enables it to encounter roughnesses of stone and other obstructions without damage to the usually delicate body-wall, a conspicuous example of the care with which Nature regards its creations, and provides the antidote for all the ills to which she has condemned her subjects, terrestrial or aquatic.

Some Varieties of the Gurnet.

There are three variations of the gurnet or gurnard species which concern the fishmonger—the red, the grey, and the sapphirine or tub, and in the main their characteristics are the same, the grey being more gregarious in habit, and perhaps a freer swimmer, than the larger tub. All are alike omnivorous, little coming amiss, although, as one would expect from their haunts, the crustacea and worms of the bottom of the sea receive the larger share of their attention.

Of the three species mentioned the tub is the largest, the grey next, and the red the smallest. The grey is the most common, as it is the most extensive in its range, being found not only towards the shores but throughout the North Sea, and accounts for the quantity of smallish fish which is landed by the East Coast trawlers, fish which are useless for the fishmonger's shop, although they have some value for the frying business, where they are mostly used up.

The shoals of grey fish that are met with are supposed to be the outcome of the fact that the female fish are as four to one of the male species, and that the roe contains, according to the size of the fish, from 200,000 to 300,000 eggs.

The sapphirine or tub gurnet is less widely distributed, and seldom met with in the open sea, whilst the best specimens and the finest fish come from the southern coast of England, being found occasionally up to 14 lbs. in weight and of a measurement of 24 inches.

The Gurnet as Food.

As a food fish the gurnet is by no means to be despised, although with each of the species there is a toughness of fibre and closeness of flake which prevents it from becoming a favourite dish, especially with those who elect to partake of a fish diet principally because it affords a lighter meal.

The gurnet, however, could well be brought to the notice of those who complain that fish has not sufficient staying power to support them in the toil which is more arduous than that of the mere brain worker, a contention we have endeavoured to dispose of in our chapter in the present volume upon "Fish as Food."

"Gives good nourishment, and nothing slimey and therefore better for the phlegmatic than plaice or flounder" was the conclusion of a writer in the seventeenth century, but we to-day would rank the gurnet far higher than this, placing it next the John Dorey for goodness and value as a food fish.

The Soused Gurnard.

"A soused gurnet" was a term of contempt in Shakespeare's day, we know not why, possibly because of the method of cooking which was to marinate it, that is to first fry it, and then to souse in strong vinegar, or other acidulated sauce, both processes tending to harden an already sufficiently firm-fleshed fish, a character which it should be the art of the cook to correct and not to emphasise.

The gurnet boiled is more than equal to the cod-fish, but the gurnet baked is best of all; the formation of the body allows of a liberal quantity of stuffing, the ordinary veal-stuffing will do, although, should some of the herbs be omitted, and a few fresh-picked brown shrimps be incorporated instead, the results would be even more appetising, whilst the resultant liquor would be the best sauce which could possibly be applied.

As with the John Dorey, the fins, and the spikes at their base should be removed, especially if the fish is to be boiled; if baked it would be better to remove them after the cooking, as the severance of the skin allows the moisture of the fish to escape. However, the fishmonger can only arrange this when the cooking is for his own table, and then it does not really matter; he knows where the sharp spikes are, the public don't, hence the suggestion to remove them.

The Statistics of the Gurnet.

The gurnard taken together as a whole, and bulked for the purpose of the report of the sea fisheries of England, are returned for

1912 as 92,553 cwts. valued £28,370
1913 „ 105,200 „ „ £34,139

a little over 6s. per cwt., and about 10d. per stone at the port of landing, showing a low-priced article that can certainly be exploited with good effect by the enterprising fishmonger.

CHAPTER XXI

THE QUEST OF THE IDEAL

At the first blush it may not appear that a subject with such a title has a rightful place in a set of volumes dedicated to business and to business topics, whereas, rightly understood, it will be seen to have, and to exercise, a profound effect upon the man who is seeking to find, if such there be, a royal road to the highest that the business life can give him.

In our first volume some paragraphs were given up to the study of that absorbing topic "Enthusiasm," and the effect that the exercise of it has upon the person who can regard his work with something more than the detached air of the machine-like and the automaton; but whilst the acquirement and exercise of the quality of enthusiasm may be an ideal, it is not in that sense one wishes now to regard the word. Rather does one desire to get back to the days of chivalry, the Knights of the Round Table, with King Arthur's quest of the Holy Grail, seeing that for these men there existed something which drew out the best that was in them, more from the spiritual than the material point of view.

Because it is customary to wed the pursuit of the ideal to things literary and artistic, it has been too readily assumed that it can have no place in the material side of life, the life which is said to be lived for the sake of the gains it brings.

Art for Art's sake has been a shibboleth these many years, as oft proclaimed to be hollow as it has been repeatedly uttered by those who may have sought the ideal which has, or should, enthral them.

"Fine art," said Ruskin in his "The Two Paths," "is that in which the hand, the head, and the heart go together," and the person of the least artistic thought will realise, that whatever hand and head may be capable of accomplishing, the art from which the heart has been excluded will be but wooden and machine-like.

Ideals in Business—

In our articles upon stock-taking and stock-keeping we have set forth the advantages of precision, shown that, without care in the multitudinous detail of the business, loss will creep in through a hundred loop-holes, how that with this oversight the branch business at a distance may be controlled and directed; yet it still remains true that these things are but a "keeping of the powder dry," and that without heart the manager, near or afar, will not be able to make his shooting with the powder effective—heart, be it remembered, not only for the *man* in his job, but for the master at his also. A heart whose pursuit of the ideal in some form or shape has moulded it into the human—by the modern Hun accounted weakness—is, by common consent and the approval of mankind, deemed noble.

—and National Life.

Whilst the tide of savagery swept through the towns of Belgium, the outcast, the flotsam on the waste of the cruel waters, found firm resting-place on the shores of England and in the homes of her hamlets. The hearts of men were moved by the misery of the helpless ones to proffer and to do as they had never done before, and out of the doing arose an ideal which will no longer allow them to look unmoved on wretchedness and helpless woe.

In this case the ideal came unsought, and so that it comes at all the moralist is glad, but better far that the ideal shall be self-sought, that the beckoning shall be from within, and that the cry, "Oh, that a man would arise in me—that the man that I am might cease to be!" should be the evolution of a man's own inner self.

It may be asked, In what way does this pursuit of the ideal affect the business life? and the writer would reply to the question with illustrations from actual life.

A Mediæval Illustration.

In the wall of a lonely church, situated, as the writer saw it in winter time, amidst marsh and misery, is a series of windows, all but one of which were fresh from the hands of the restorers, whose lean-to working-hut was still by the angle of the tower. The new windows were of perpendicular Gothic, set out by compass and pencil, with mathematical exactitude, and the workmanship of which did not deviate one-eighth from the true, but the appearance of the completed work was tame, weak, trashy, and repulsive in the extreme.

A kinder fate had saved the one window from modern Vandal hands; most of its stone had weathered the centuries, but some of it had been renewed from time to time, and the renewers had not been careful to correspond exactly the new work with the old. The hypercritical could have pointed out that scarce one curve of any trefoil matched its opposite fellow, and that the thickness of this or that mullion was contrary to the proportions of the remainder; nevertheless, one realised that here was the work of men with ideals—men in whose work was spirit, was life, for the work *lived*, and in the stone of the marsh church was seen the heart of the village stone-mason of the bygone ages, to whom joy in his task was a necessity of life, and thus his ideals remained, although the stone in which they were expressed was crumbling away.

And Another from the Thirteenth Century.

Recently the roof of a large cathedral church was being removed for the purpose of rebuilding; at the intersections of the oaken roof-ribs were discovered some carvings by the master-workmen of the thirteenth century that had remained *in situ* for seven hundred years, unsuspected by the many who through all those ages had made the church their common ground and meeting-place.

Why all this waste of labour? Why all this wealth of imagination, healthily grotesque, conveying the soul of the worker to the inanimate oak? Why?

The worker found his consolation in the freedom which allowed the working out of his ideals; it mattered nothing to him that his work was "skyed," and was to be always "above the line"; he had put forth the utmost for the highest, and if none might know that it was there, *he knew* that he had done it.

An advertising age understands not the self-effacement of the man with an ideal; the latter-day carvist must push his wares accompanied by the gold medal, or the pasteboard certificate, and require a ceremony of dedication to endow the work with a soul which the worker could not give it. Albeit there are still men in our midst who are endeavouring, even in art, to reproduce the thoughts they cannot utter, the forms they cannot grasp.

Ideas *versus* Ideals.

Were these pages written for the schoolmen the writer would be told that the ideal is the abstract thing that cannot be gripped, that is always receding, but never here, and therefore unfitted for human nature in its need of winning an existence from unkind surroundings.

Be that as it may, the writer would oppose to it the contemplation, for instance, of an eastward stained-glass window when the night is drawing on. The central figure is in light, surrounded by the reds and browns and greens of the groups and subjects which make up the artist's picture.

One by one the darker shades mingle with the night until at last the central figure, in its pathos and appeal to the imagination, alone survives; in the darkest hour before the dawn it is still there, a fainter shadow in the gloom, and as the first shaft of light shoots outwards from the east, that central figure is the first to be illumined, to be radiant with the ideal of the man who conceived it all, and could transform an idea into an ideal.

To separate the idea from the ideal may be difficult, but, broadly speaking, it may be said the first appeals to the head and mind, the latter to the heart, often, perhaps, through the one to the other; but, without contradiction, the finer is the ideal, and whoever seeks and finds will incorporate the spirit thereof into his business, and men will know him for something greater than fame, or gold, or power.

CHAPTER XXII

"FISH AS FOOD"

A Recent Campaign.

A recent year saw the inception and culmination of a "Fish as Food Campaign," undertaken primarily on behalf of the trawler owners and fish merchants around the coast. Its work was somewhat widely cast. The newspapers were called in aid, in fact such publicity as was achieved was mainly through their instrumentality, but results would have been of a more enduring character, the effect more far-reaching, had the campaign sought the active assistance of the retailer and pushed the idea by pushing him, assisting the plan whilst assisting him to develop it; for, as the trade passes through his fingers, it is in his power to assist as no other medium can.

That some measure of success was achieved is undoubted, as such a laudable idea of popularising the fish of the sea as food for the land deserved to do, although the forecast, more in jest than earnest, that the day would be when we should have our prize strains of halibut and turbot is not doomed to realisation.

A Continental Campaign in Contrast.

One cannot help contrasting the character, or conduct rather, of this campaign, with one which was outlined at the Congress in connection with the International Exhibition of Fisheries held at Malmö, in Sweden, in 1914, as having been entered into by one of the constituent States of Germany.

The scheme was under official control entirely, indeed it was the outcome of the initiative of the Director of the

Fishery Board of Hamburg, and had been at work from 1908. From Hamburg it has spread to Würtemberg and Bavaria; lectures were delivered, lantern illustrations, and cinematographs, demonstrations in cookery were shown, as well as pictures where the demonstrations could not be given.

Information as to comparative costs and of food values, paper articles, and a special periodical, *Fish as Food,* were distributed broadcast with German thoroughness.

Every phase of the business—catching, cleaning, marketing, and cooking—was illustrated in every possible form to appeal to the largest possible audiences; the ideal of the preparation of the fish which it was sought to enunciate was, that a satisfying meal of fish and vegetables could be prepared for threepence per head. The fishmongers were brought in to assist, being induced to sell certain fish on certain days at a lower scale of profits, in fact any one and every one who could be influenced or bidden, or commanded, —for such is the Continental way—to help, were brought in to the scheme, with the result that all concerned are pleased with its success.

Future Departmental Help.

We may scarcely hope to emulate these exploits, but we may rightfully look forward to departmental assistance in the future, to further any work that the trade may voluntarily initiate.

Will it be forthcoming?

Fish as Food.

Since when have men lived upon the fish? History is silent. Although we read the lament, "We remember the fish we did eat in Egypt," we do not imagine that as representing, by any means, the first knowledge of its value, for myth and folklore, extending as it does, to the dawn of the years, has incorporated the fish in all its sayings.

Neither do we look upon the fish of Egypt as being particularly agreeable, for the historian Petrarch relates that when the priests were interrogated why they did not eat the fish on certain days as did their people, they gave answer, "The fish were neither nice nor necessary!"—all-sufficient reasons these for the men who could be above the law whilst they had power to compel their flock to keep it.

The same reasons might well be given to-day, the first because of fact, and the latter because of ignorance.

The Not-niceness of Fish.

Assuredly much that is served as fish is not nice; not that there is any fault to find with the fish as fish, but because of the treatment it receives from the various folk through whose hands it passes before coming to the plate of the eater, the person whose verdict seals its fate as to its use on future occasions.

Sir Henry Thompson, K.T.

The realisation that this is the cause of much of the distaste is not recent. The writer remembers the tall, erect Sir Henry Thompson, K.T., with his sharp, kindly features surmounted by bushy eyebrows, as he would come from his brougham into the shop and discuss the rights and wrongs of the handling of the fishes.

There was not one of them but he knew its possibilities, and he would discuss with the old foreman the methods of its dressing and cooking, for his knowledge as one of the foremost surgeons of the day was encyclopædic as to the albuminoids, nitrogenous matters, and so on, connected with them, and the needs of the folks who should eat them.

Having chosen his fish, he would see it cleaned and trimmed *his* way, deferring to the old man a little where purely technical knowledge was involved, and we learned, on listening, how much was gained or wasted by this method or that, and although money was of no consequence to him, the sole bones and head, if not the skins, would go to furnish his stock pot, instead of being wasted in the rubbish tub.

His Interest in Fish as Food.

His pen was busy, too, from time to time with the same subject, but the opportunities of publicity were small then to what they have now become. In sympathetic knowledge, in every shape and form, he was in himself a whole army-corps, if not a whole campaign, as he was the first arouser of interest in the subject.

Kindly-eyed man, if at times looking a little severely from behind his gold-rimmed spectacles, he was thirty years before his time, and the world has ceased to appreciate him, but the fish trade would honour him and confer a signal service upon itself by republishing some of his articles upon the subject, for they were replete with the knowledge of the practical scientist, who, whatever happened to the joint, would probably see that his turbot was not murdered in the cooking, and that his sole was done to an exact turn before the fire.

The writer has read nearly all that is to be read upon the subject of the cooking of fish, keeping it palatable, retaining its qualities, and saving the precious food from waste, but no writer has shown a more complete grasp of the subject, or handled it with more effect, than did Sir Henry Thompson, K.T., M.B.

Fishing as the Fore-runner of Commerce.

Undoubtedly, fish has been food since the earliest days when primeval man found it easier to catch fish than game, and learned to make the implements, hook, fish spear, and net, that are figured upon some of the oldest monuments of antiquity, as giving a quicker return for labour than the tilling of the soil.

Sidon, said by Semitic scholars to mean "the fishery," shows a civilisation that was made possible because of the fish and the fishing colony that gathered around it, in like manner as we to-day look upon a few fisher-huts and see how, from that inhospitable point of beach, life is possible for the fisher, and commerce is assured for himself and those who trade with him.

Harvests of the Sea and Soil compared.

And all for a reason which is, perhaps, little recognised, that whereas the ground gives but one harvest a year, or, by intensive culture, it may be two, or even three, when the labour must be in proportion; yet it is a harvest upon one surface only, whether of corn to gather, or of food for beast. The acre will produce its quantum—a ton of corn, it may be, or two or three cwts. of meat and cheese—but to the insistent fisherman, the sea yields a far greater harvest in weight and proportion. Not only does the floor or sea bottom teem with life, lower life, affording food for food-fish, but whether the water be "full fifty fathoms deep," the graduated shoaling water in shore, or the vast expanse unfathomable, yet does every cubic foot breed and abound with animalculæ, crustacea, plankton, and whatever else in weed or water forms the sustenance of the fish which man entices, or encloses with his art.

The Produce of an Acre.

It has been shown that in a shallow watered fish-farm, a production of fish equivalent per acre to double the amount of cheese or meat raised upon the land is possible, sufficiently proving that where Nature works upon her own account, and the depths are almost beyond computation, that man possesses in the sea the greatest food supply of the world.

Perhaps for this reason, and because its wealth has seemed inexhaustible, the sea has received but little attention until recently, but, as our chapters on the various fishes will make clear, knowledge is increasing as the Governments recognise that research on behalf of the people they represent should be a State charge, as it is a State duty, and out of that realisation will come the improvements that are possible, and fish as food will become more than ever the valued inheritance of the race.

The Inheritance of the Sea.

"The inheritance of the race," and such it is, for Nature goes on working for man, providing for him and for his wants, and, all unaided, maintaining a balance between the inhabitants of the sea, which, in the main, has worked out for man's benefit, and, as illustrating the part the ocean plays in the economy of land life, let us note that this body of water to an average depth of 11,500 feet (over 2 miles) covers five-sevenths of the earth's surface!—an elementary school fact, but one too often forgotten when beyond school days.

It is true that the present fishing limit, by the aid of the otter trawl, extends only to the hundred fathom line, about 7 per cent. of the total, which 7 per cent., however, takes in an area of 7,000,000 miles, but the remaining 93 per cent. must be looked upon as feeding grounds, or as providing the crustacea, and so forth, which afford life and growth to the inhabitants of the smaller and food-providing area.

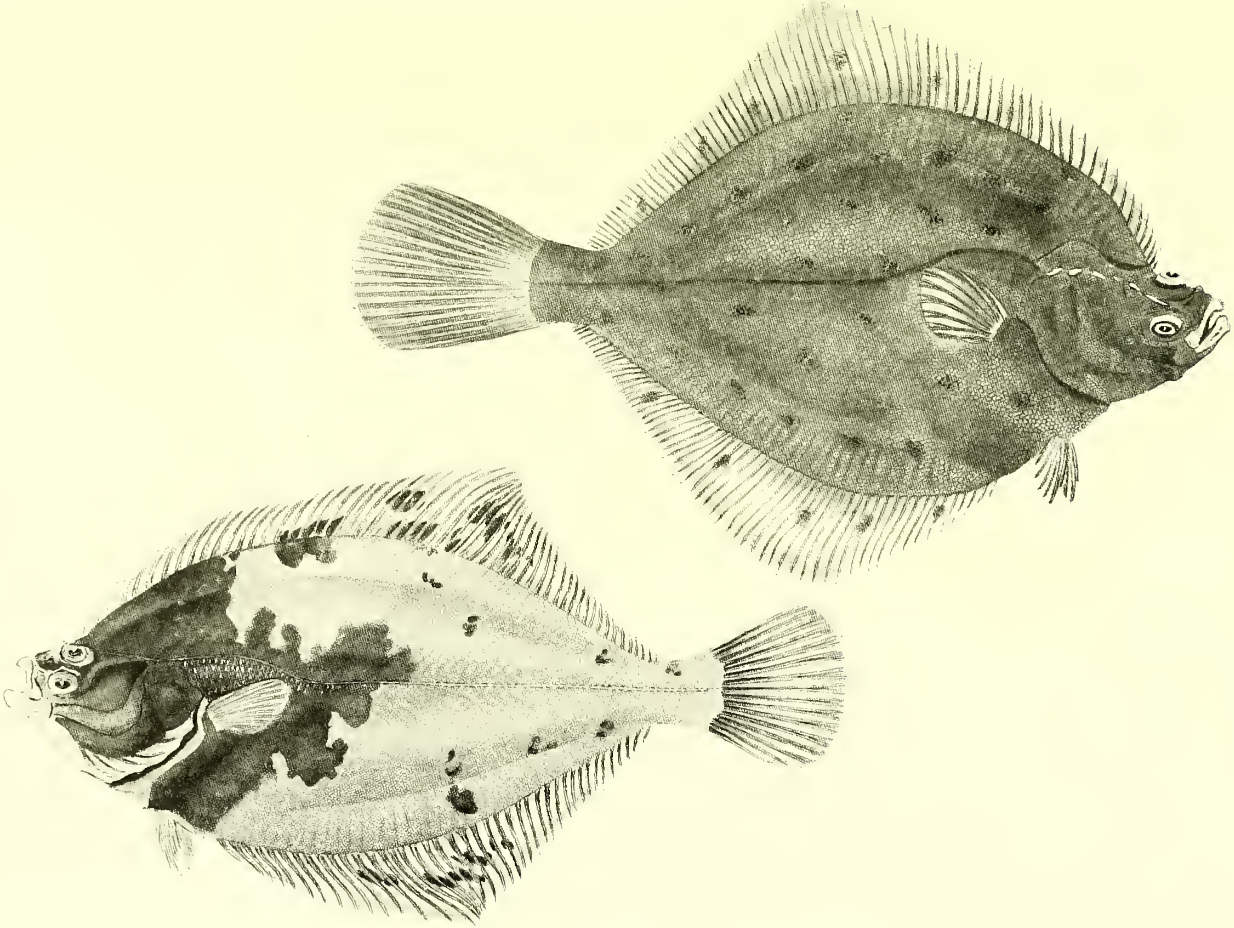
Figures such as these prove to us the vastness of the preserves, and the resources that must reside in them, for the continuous supply and coming forward of the food which the nations need, and need the more as they understand the value of fish as food, either as an alternative diet or in place of the more solid substances which are apt to form the staple foods of the descendants of a pastoral race.

Why are we Fish Abstainers?

It will be instructive to learn the reasons why the people of England, for instance, do not more often include fish in their daily menu, and one reply would probably be because of price.

Price?

Our free trade policy has given to this country a wider choice of foods and at more favourable prices than falls to the lot of any other nation.



PLAICE.
FLOUNDER (a parti-coloured specimen).

Rabbits from Australia, mutton from the Argentine, salmon and halibut from Columbia, poultry and game from the Far East, in fact wherever a country has surplus food to dispose of and can take commercial products in exchange, there is a market to be found for the food in England.

At the time of the great war it was understood for the first time by many of the public how great a bulk of herrings caught around our eastern coasts were bought for or consigned abroad, the figures for Scotland being for 1913, 1,400,000 barrels cured, of which great total there was sent to the Continent 1,300,000, by far the larger part of which were taxed with an import duty of 13s. per barrel as they went across the border line into Russia.

The Continental Herring Trade.

To the millions of that country who purchase the product of our English seas, the herring must represent an outlay of a sum comparable to our 2d., from which the inference might be deduced that if the fish were dearer we would purchase more of it at home; the reason for the Continental demand being that agrarian interests, and import duties generally, keep up the price of food stuffs, so that, although the herring is double the price it is in England, it is yet cheap by comparison with other commodities.

Economic Reflections.

The reflector upon economics, however, cannot get away from the fact that as a people we are spending more upon the sustenance of life than is required either by the laws of hygiene or of necessity.

The fishmonger realises this when his trading experiences show him that a customer's account for fish is always immeasurably less in quantity and bulk, as well as price, than the more solid foods; that the joint is the centre-piece of household expense, whilst the outlay upon fish is for such meagre quantities as can only be toyed with, the trimmings of a main meal, or the insignificant relishes of a minor meal.

The Nutriment of the Pickled Herring.

That the herring has within it a sufficiency of nutriment for the sustenance of a hardy life is proved by the persistency with which it forms the meal in climates more rigorous than our own, and from which emerge a people no less vigorous; in fact, the herring is eaten more by the races who are nearest the Arctic Zone than by those who are farther removed, and the same may be said of the dried cod-fish and the *klip-fisk* of the Norwegian, both products at a reasonable price, which, to-day, are not esteemed by us at all, but, on the contrary, emphatically eschewed.

On the score of price, then, here are two fish, containing nourishment sufficient, but which are, apparently, not eaten, because they are *too* cheap.

The unlooked-for coming of the war left a great quantity of the Scotch curing, about a third of a million barrels, in the hands of the picklers, and upon them fell, with great hardship, the proclamation forbidding the export except under license, which was more than difficult to obtain, it being obvious that the temptation of great prices from the enemy would naturally draw the food supply to their country, whatever hands it might pass through first as the importers from England.

Its Introduction to English Customers.

To remedy this it was sought to introduce them to our own towns, but although the prices of all food stuffs following the rise of the twelve months or so previous to the war were at a maximum, it could only be said, "There is no trade for barrelled and salted herrings."

Can this be remedied? By education we believe it can, but education from one centre, the instruction of England's millions from one office of State, is, under our methods of government, impossible unless it were begun from the infants' school, and the practical lessons of economy of purchase and outlay made a study of by the children in every grade of school life.

The Fishmongers' Task of Educating.

Apart from this the fishmongers of the country can do something to induce a popularising of the fish they sell.

Scientific analyses are not of themselves inviting subjects for discussion and advertisement; the trader is apt to think they are connected with the higher education of the period, and having nothing whatever to do with him and the prosaic counter work of everyday life.

But it should be useful to him to know that mackerel contains as much of the nitrogenous compounds as any meats, and that a herring, fresh, is equal in this respect to lamb and pork, whilst conger eel is greater than all; further, that a salted herring contains 19 per cent. of nitrogenous matter and 14 per cent. of fat as against 10 per cent. and 7 per cent. respectively in the fresh herring, chemical enquiry thus bearing out the knowledge of experience that, in staying power, and fatty compounds, the salted or pickled herring is by far the richer fish.

We have given the comparative figures in regard to the cod in our chapter upon that fish, so need not now repeat them here, but a reference there will prompt the reader to further figures for his armoury to use in his self-imposed task of driving home his lessons and educating the circle of customers of which he is, or should be, the centre.

The Brain-worker.

It may be that a less percentage of our population than formerly is concerned in heavy muscular work, that the effect of steam, motors, and electricity, generally, is to reduce the manual labour, in which case it is very evident that the lighter food, the whiter fish supply, is better for the brain-worker, not because of the excess of phosphorus which the fish was supposed to contain, but because it is more easily digested, because less of the drowsy feeling results after a meal, and the man is more alert to his task; whilst even for the active muscle worker such fish as the mackerel supply enough of nitrogen and of carbon to be a sufficient meal occasionally, if not continuously.

The Policy and Practice of Fasting.

The mediæval practice of fasting, in which fish was substituted for flesh, would seem to have had its origin in the very early knowledge that flesh foods continuously partaken of were not good, or at most the best, for the system.

Its Value to the System.

It is not probable that the law had any ulterior purpose to serve, such as the betterment of the conditions of life for the fishermen by compulsory eating of their goods, for the Church embraced large areas where it was only possible to obtain a salted fish, and that from sources which might be beyond the control of the religious law, therefore we are justified in concluding that the custom which survives in modified form to-day of eating salted fish on Good Friday is but the survival of an early appreciation of the fact that flesh alone was not a satisfactory food for man.

Continental Curing.

It is noteworthy, too, that the Continental methods of preparing the "Klondyke" herring—the fresh fish that are sent across in boxes, iced and sprinkled with a little salt—are far advanced compared with our own; perhaps the fact that the freight and profits, and the import duty of 3s. a box, making the fish more expensive, and therefore more valuable, conduces to a greater care and variety of treatment than in England is ordinarily thought necessary for such a common fish. But the fact remains, the Kieler Bucklinge and the Kieler Sprotten have no equal in excellence, and were until very recently without even a rival on this side of the Channel, the thoroughness of our Continental customers entering into their treatment even of the lowest, so-called, class of fish.

To Popularise the Cheaper Fish.

Can the fishmonger popularise these cheaper foods ? At least he can try, but at present it must be confessed that the palate of the people is against them, and to combat this fact there has not yet been given to them the simple recipes which must obtain upon the Continent for dealing with them in the homes and kitchens, the very ordinary method of filleting the pickled herring—each side can be torn from the backbone without the aid of a knife—and removing the skin, and dishing the fillets up raw, served only with mayonnaise, certainly would not find favour until the palate had been, from childhood, schooled to the task.

For such as can be brought to like it, however, it is a cheap and very satisfying meal.

Cooking a Pickled Herring.

So, too, is the method of our boyhood—to boil the potatoes, and when they are nearly ready to place the herrings on top, and when the potatoes are fit the herrings are cooked. The salt is drawn out by the action of the water and steam, and is sufficient for the potatoes ; so also the fat which the heat extracts from the fish, instead of being wasted is caught by the tubers, and thus a dish of potatoes, *plus* two or three comparatively costless fish, will form a meal that for smallness of outlay could not be provided in any other way.

The fat, it must be remembered, is the most nutritive part of the fish, and the better the herring the greater the amount of fat, and the fishmonger will know that only the primest fish are pickled, and as distinct from condition the fish which contains the greatest proportion of fat will make the most money in the Continental markets for which the fish are primarily cured. Any method, therefore, that may be evolved for utilising the fish should also include the conservation of this, the most valuable part of it.

Herring Pie.

The herring pie, another variant, in which the potatoes are formed into a crust, after they have been boiled, of course, needs the using of fresh herring, for salt will not gravitate upwards, but upon the fish is placed whatever scraps of fat the house affords, bacon fats and rinds are as good as any, and these in the cooking soak into the fish and make up for what the fish itself lacks, and gives to the partakers of the meal the necessary warming element which the system needs.

Another reason why the herring is as good a nourisher as pork is because we have seen that it has the same nitrogenous value, and that therefore the fat which is added will produce as satisfying a dish at only a small proportion of the expense.

Dietetic Value of Fried Fish.

This is the reason why the dietetic value of fried fish is greater than when it is boiled, the root reason really for the popularity of the fried fish shops; quite apart from the cheapness associated with them, the customers realise a physical satisfaction in the completeness of the meal which it is otherwise difficult to obtain for the same outlay.

Care Necessary in the Cooking of Fish.

Another factor against popularising fish is that it requires care in cooking; the schools have done something in proving the possibilities of good cooking in the smaller homes, but for the most part their energies are concerned, if not used up, in cooking filleted fish, the easiest, as it is the most wasteful method of all, unless all the trimmings and bones of the fish are used up in some other form.

The usual method of frying is to grease the bottom of a pan, place the herring in it, and when one side has stuck, by burning, to the pan, it is turned over on the other side, and ultimately finds its way to table a discreditable fish, broken, burnt, and spoiled.

Some Frying Wrinkles.

The fishmonger will have to combat this carelessness or want of knowledge, and to seize the opportunity of instruction, by voice or writing, wherever it may offer. Leading up to the desired end, one of the fats, or margarines, suitable for the purpose, might with advantage have a prominent place upon his counter, and the merchants will supply the necessary knowledge as to temperatures and treatment. In frying, usually before the fat begins to give off a vapour it is ready for the fish, but there is no economy in being niggardly in the quantity of fat used; the more is used at the right heat the less will the fish absorb, and the quicker will it be cooked, and afterwards the fat can be poured into a crock for use on a future occasion.

The open fire, or grate, are not satisfactory mediums of heat. Rarely can sufficient be focussed to give the necessary temperature, and without that all frying is unsatisfactory.

Another item to be remembered is that each piece of cold fish introduced to the fat reduces the heat, so that the fat must recover each time before another fish is put in; it is not necessary that each should be cooked, only that the fat should again come to the right heat, and for this cause again the gas-ring, or stove, is to be preferred.

Where the amount of fat is limited the covering of the frying pan with a plate which fits it closely prevents the burning, to some extent, by throwing back the steam into the fish, thus keeping it moist. An agreeable variant from the ordinary is this method of cooking — a little fat is first placed in the pan, and an onion is thinly sliced and fried brown before the fish is added, when the extra steam thus raised enables the cooking, if the pan is kept covered, to produce a satisfactory result at a commensurately smaller outlay.

Properly speaking, these things should be treated of in our next volume under the head of cooking, but concerned here as we are with fish as food, particularly of the cheaper fishes, it is necessary to infringe somewhat upon that section.

Boiling.

Because of the need of the carbons for the body's building, the boiling of fish must always be an unsatisfactory method of cooking; the serving of the liver, once so general with cod-fish, was the natural way of getting over a difficulty, but the water-plan is wasteful, especially when a small fish is "drowned" in water and "galloped" to make up for lost time—wasteful in any case, for an analysis of the water would prove that whatever fat was in the fish had nearly all gone into it, and much of the nitrogenous nutriments, also vanished from the fish, had taken refuge in the water, to be thrown away as useless.

Questions of digestion and invalids do, however, arise, and where necessity compels, no other law is allowable.

Little Water only wanted.

In these cases the water used should only be sufficient to cover the fish, and after having had the quantity of salt added should be brought to the full boil, when the fish may be dropped in, and after boiling has again been effected, a gentle simmering only should be allowed until the fish is ready to be dished up. The outer pores of the skin and flesh are sealed up by the heat, and kept sealed; the cooking taking place by the creation of internal steam, as in frying, and not by the soddening with the water, two very different processes, and producing widely different results. In one case the fish is food and the water valueless, in the other the fish and water *are* food; by the first method the fish is tasty, and in the other, in its broken raggedness, insipid and unsatisfactory, especially where hard work has to be performed.

Without nitrogenous food the husband who is using his muscle at work, and the children who are developing theirs, will be hard put to it if these building-up qualities are washed out in the cooking, or if the choice of food debars the eater from securing the quantity that his labour and the calls of Nature's growth demands.

For invalids a better plan than boiling is to put the white fish between two plates or dishes in the oven, and let it cook in its own juice, aided, perhaps, by a tasting of butter and a little plain seasoning.

The Paper Bag.

Better still is the paper bag process, as described in our first volume, whereby all the juices are preserved; the fats are added to by a little greasing of the inside of the bag, and any moisture that results is served up with the fish, the only satisfactory sauce, and one which a Soyer could not excel.

The fishmonger has to realise that popularising his wares means proving their economy, and recommending those methods of treatment which differ entirely from the ordinary cookery book, whose adjuncts, as detailed, to complete the task, cost more than the fish itself.

The methods he advocates must be simple, not such as involve a preparation extending over hours or needing treatment over night; he must be *au fait* with his subject in every particular, especially with those that are treated of in the volumes before him. Reading will give him an exact knowledge, trying things out for himself will supply the experimental, and the combination of these two will go far to assist him in that local fish-as-food campaign which alone can be of permanent value to him.

Physiological.

Before arriving at the necessary and right conclusions upon this all-important subject, one has to realise the physiological facts of life, both of the human species and of those forms which contribute to its upkeep.

It is apparent to every thinker that the question of sustenance is entirely one of intake and output, that the quantity and quality of the latter is the deciding factor, and that no one can be properly, economically fed unless the intake is ordered to correspond.

That humanity too often "digs its grave with its teeth," is no mere figure of speech, or a hyperbole without meaning, is clear to all; the dull eye, the heavy head, the slouching gait, are all too often the result of an accumulation of material within the body which it has found impossible to throw off, or to part with, and the twinges of rheumatism, the periodic scourging with gout, the desire for the Alps or a pilgrimage to a foreign Bad where the remedy is well nigh as bad as the disease—all these are the protests and cravings of nature for relief, expressed in more or less intelligible form, summed up in this, the incurring of expense to neutralise that condition of body which expense has already been incurred to acquire.

Some Facts—Chiefly Analytical.

If we are rightly to understand the function of food we must first know its component parts as well as the composition of the body which the food is intended to feed, and the first surprising fact is that the human body is composed of three parts water; slight variations there are, but in the main that figure may be accepted as a guide.

In the flesh of a healthy animal, living its ordinary accustomed life, the proportion is similar, whether beef, mutton, poultry, or rabbit.

In these ordinary meats the proportion of nitrogenous foods, flesh and muscle formers, may be taken at 16 per cent., the fat at 2 to 4 per cent., and the remainder in extractives, minerals, and salts, which the body cannot well do without; but in the pig or stall-fed animal, grown for weight, the taking of exhibition prizes, and such like, the proportions of fat will be altered according to the circumstances and the pocket of the feeder, for never yet was domesticated animal fed far beyond the normal without the economic result being one of loss, and in this respect men and animals are alike.

These proportions have been taken and are given for flesh alone without bone.

Of Bread and Fish.

Comparing bread, wrongly called the staff of life, with these figures concerning flesh, we find that it contains forty parts of water, fifty of starch, eight of nitrogenous matters, with fractions left for fats and salts, whilst the potato is devoid of fats, and contributes mainly starch as the bulk of its make up.

The hundred parts of fish without bone are divisible as to seventy-five to eighty-five parts of water, twelve to eighteen of nitrogenous food, whilst with white fishes the proportion of fats may be taken at less than one per hundred.

The Fats of White Food Fishes,

Some of these white food fishes have fat as one of the accretions of their growth, but it is contained in the liver, the cod-fish being the outstanding example, with the skate second, whilst the bream, red mullet, whiting, haddock, when in full robust condition, have also their due proportion, which can be taken or left, as seemeth best to the eater. The liver of the red mullet is looked upon, as is well known, as the principal delicacy of the fish—a fact regarding other fish also, did we realise it—for the sea-bird of the north, catching its fish for its nesting ones, or family on shore, is known to tear the liver from the fish as the *bonne bouche* for its own devouring and reward before taking the remainder to the hungry ones in waiting.

And of Coloured Food Fish.

Whilst the fat is thus scarce in the white fishes, it is more plentiful in the coloured flesh fish, varying from 7 per cent. in the herring, to 12 in the salmon, 15 to 16 per cent. in the mackerel, and 30 in the eel—a graduated scale which accords well with one's own experience and knowledge. We might be inclined to think the salmon contained more, and the eel less, but measured by the degree of digestibility, the scale is as empirically correct as the analyses declare it to be.

Food—its Object.

The object of food is not that of satisfying desire, it is to replace the worn tissues, to renovate, or, rather, re-create those which work and labour have broken down; to keep up the warmth or temperature of the body, and to supply the motive force for energy—a threefold need, which, if it be carefully supplied, the body receiving it is not easily broken.

Custom and Actual Need.

But in all stages of life man—and woman—is a creature of custom; from the feeding of the child through the years to maturity, and onwards, we eat the certain things which we like, or some one "likes" for us, obtaining from the rough and ready system fairly satisfactory results, but occasionally receiving shocks that might have been avoided.

The degree of labour, of climate, and of age, the amount of mental work performed, and all similar things, need taking into account before we can rightly order what our diet is, and should be. The soldiers at the front; the sailor man on sea or on shore; the mechanic stationary at his tool, or the carpenter driving the hand-saw—these all require some variation, and each again differ from the sedentary clerk, or the still more sedentary man of letters.

Fish Fats as Oils, and the Use of them in Cold Climates.

As a people we have no use for fish oils; they are repugnant to us, although since the method, recently discovered, of hardening them by hydrogenation has come to the front, there will probably be a distinct use for them for food purposes. The Esquimaux, however, needs no preparation of his blubber; he is needing warmth, and still more warmth, and the fat of the sea-fish, or animals, must supply it, and that it be eaten in the raw state is probably to him an advantage.

The Custom of the South.

The people of the south need warming material but little, and that little is supplied by the more palatable oil of the olive grove; the fish and flesh meat required is small, whilst the bulk of food, for always there must be bulk, is obtained from the fruits and the cereals which their lands produce in plenty.

And of the Temperate Zones.

The custom and practice of these nations at the extreme points of the temporal zone, customs which are the outcome of centuries of experience, point to us the way of adapting the food to our requirements—an adaptation, which as a nation, we have not felt the need of learning to the full extent, placed, as we are, where neither extreme cold nor heat affects us for any prolonged periods at a time.

The man of muscle needs meat, or that which will equally well supply its place; the difficulty is that years of acquaintanceship and experience with the flesh meats have proved their capabilities, and what else may do the like service for him he does not know.

Fish Pie as an Alternative Food for Labour.

The fish pie of the coast-man, living where other foods are scarce, or where communication with the outer world is difficult, is made into a perfect food by the observance of certain essentials; these are not thought out, but long years have established the knowledge of the value of the dish, and until something accounted better appears, it holds its own.

The white fish—any fish will do, but if of the harder, more solid sorts, such as conger, cod, and ling, so much the better—is cut into pieces and placed in a dish; the condiments can be "according to taste," as the cook-books say, and over the fish is placed such fat as is easily or cheaply obtainable. The pig in such districts is possibly the most available, and there are cuttings and fat pieces from it that are ordinarily looked upon as "offal"; these can be used, and are at once cheap and effective.

The crust will be the ordinary paste crust, or it can be of potatoes. The latter lacks the nitrogenous constituents of the former, but a combination of both is good, and secures a larger proportion of starch food.

Here, then, is a dish which is incomparably cheaper, and in every way as satisfying to the real needs of the system of the hard worker as any form of expensive material which can be purchased.

The Insufficiency of Fish:—the Remedy.

It has been alleged that after a fish-meal a person feels unsatisfied, and the wish for food returns sooner than usual. This cannot be questioned, but the reason is that the fish, as fish, has had to take the place of the meat or joint, and that the balance of nutriment has not been properly made up either in nitrogenous matter or fats.

The suet pudding, the tart with well-pronounced crust, these in perhaps slightly heavier proportion than usual, are required to complete the balance, and without them, or something which is an equivalent, it will be found that an interim meal is desirable to make up the shortage, against which the system is crying out in the only way open to it.

At a fish dinner, such as our diplomats used to partake of at Greenwich or Blackwall, the courses might be many and varied, and the method of cooking and serving finished to the last degree, but the scientific wind-up of the meal was the handing around of the well-fattened Yorkshire ham upon a dish of broad beans! To the many this might seem an elaborate joke, but was really the survival of the sense of need that had always declared itself to the fish eater.

The Uses of Sauces.

Another form of this is seen in the various sauces compounded to accompany the cooked fish, mayonnaise, hollandaise, the melted butters in variety, with their yolk of egg, olive oil, and butter constituents, and even although some of these may serve to disguise the fish they presume to act with, yet a purpose higher than that of a mere tickling of the palate is well served by them.

The necessity for fats is well exemplified by the custom which belards the bread with butter, or the more homely, but probably quite as wholesome dripping, each fulfilling a part that jams and preserves are powerless to play, and that, good as they may be, they can never take the place of.

Muscle *versus* Mind.

The labouring man needs the food to be of a highly nitrogenous character also, and beans, lentils, and cereals generally will supply it, but the man of sedentary habit, whose body must remain quiescent, and whose muscles are saved from the wear and exhaustion of manual labour, can well look to the lighter diet, the more easily assimilated food such as fish presents him with, for a complete sustenance year in and year out.

The flog and throb of an active life makes its demands upon the muscle and the body, and whatever nourishes them is helping the mental faculty also, but when the habit and the quietude is that of a reflective or brain-using life, then the starches and the fats must be reduced—the quantity as well as the richness of them.

Therefore it is that the fish acts as an ideal food whose resultant, in terms of sustenance and fibre building, is sufficient, but whose residuals in the body are also more easily eliminated, the two factors which middle years and age have most to consider if they would be well, and keep well.

Fish as the Food, *par excellence*, for All.

For this purpose the range of fish available is wide, and for each class of society and of life there are fish which supply the need of it, fish whose price brings both into touch, the one with the other.

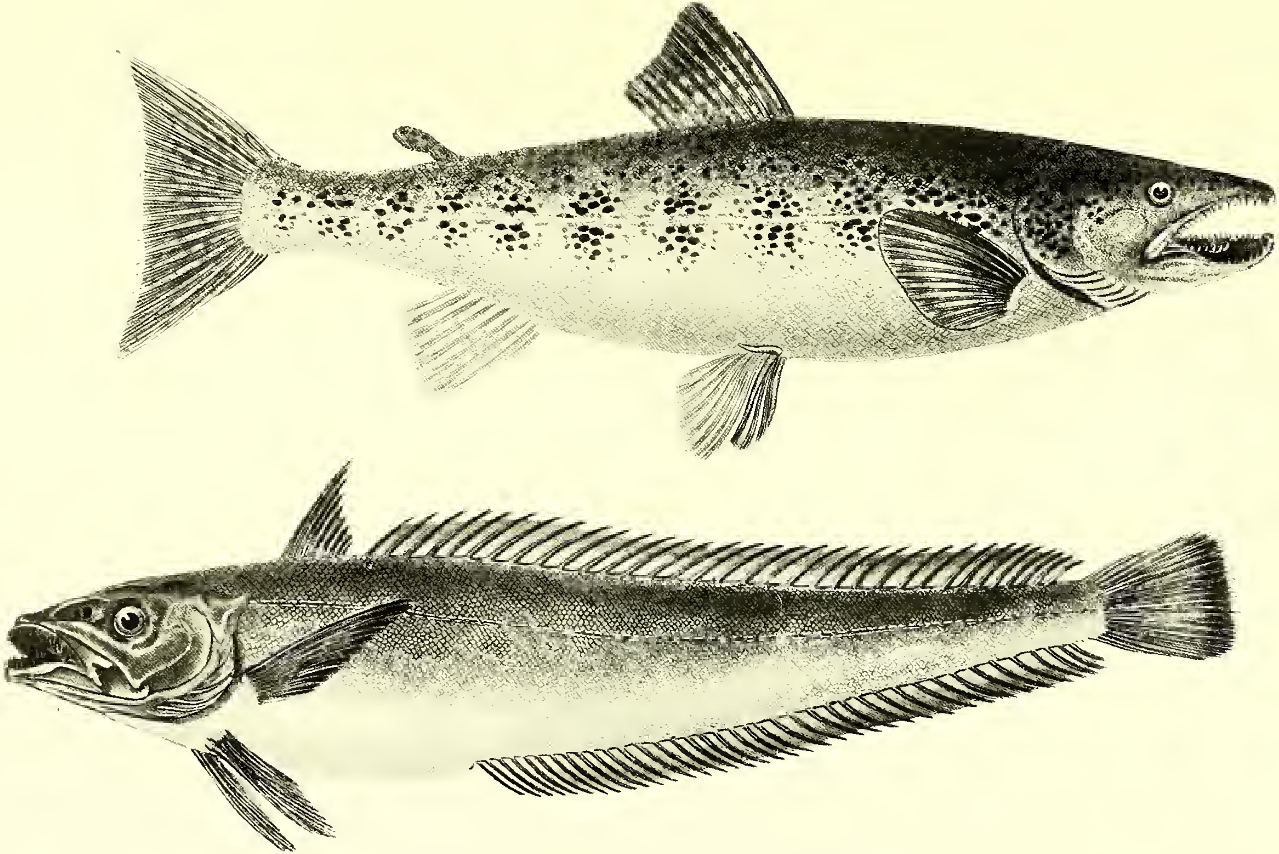
The herring has been shown in our chapter upon it to be a fish of universal value, one whose cheapness is in inverse ratio to its nutrimental qualities. The salmon in its costliness appeals to those at the other end of the social scale, but these, be it noted, alternate their requirements between the salmon and the sole, the one rich in fats, the other entirely innocent of them, for the most delicate of fish is the one with the least nourishment in its composition.

If more fat than the herring gives is required the mackerel comes with its larger proportion than even the salmon, and yet it is within reach of the poorest; whilst if yet still more is required the eel will give it.

But the fats are obtainable otherwise, and some of them in economic manner also, so that it is the simplest form of cookery which can add to the whiting, the haddock, the hake, and the cod, whatever is necessary, much or little, according to the demands of the person concerned.

Fish Food as an Evidence of Culture.

Some one has stated that the demand for a fish diet is evidence of an advancing civilisation, the triumph of mind over matter, of things mental over things muscular, and if the increased demand, as shown by the landings of each following year, is an evidence of mental growth and the spread of civilisation, then all is well with civilisation sporadic but distressing exhibitions to the contrary notwithstanding.



TROUT.
HAKE.

Popularising Fish as Food.

There is much yet remaining to be done in the popularising of this, the most abundant food of nature upon the globe. We have already referred to the wastes which occur in dressing fish, the bones and head which equal in weight the amount of fish that is taken from them in the filleting, and that are never put to service, because, it would appear, that food which gives less trouble is abundant.

Cuttings and Trimmings.

The cod's head is packed full of nutriment from lip to neck, but is rarely troubled about except as an occasional food for dogs, when it would, and should, make a wholesome satisfying meal, with potatoes and some fat, for a good-sized family.

In our young days women and children stood in long queues outside the fish shops for the trimmings, which were sold to them at night for a trifle. As a reflection of poverty it was not an inspiring scene, but the odd flaps and cuttings made a good meal possible, and prevented an economic waste.

The Demand for Dog- and Cat-Fish.

In other directions there is improvement. The dog-fishes —at one time manure, and looked upon as a nuisance even at that—were never eaten; within the last twenty-five years they have become a valued food, and the demand is such that the market is always cleared at remunerative prices to the fishermen.

The cat-fish, which none dared name in polite society, has come into general use under the various guises of Scotch hake and the like, and has proved itself one of the most succulent of fish, rarely rising above the 4d. per lb. limit.

Ling, at one time only known in the salted state, to be taken at fast time as a penance, has found a continuous market and sale on the fishmongers' slabs, also at a low figure,—for the time being.

The hake has been rescued from obscurity, creating a list of followers who will not be fobbed off with whiting, pollack, or saithe, if they can possibly purchase the fish itself.

Thus the extension has gone on, and the popularity has increased, and would yet more if the fishmongers put heart and soul into the business of telling the good points of the fish, and how they can be utilised to fill up all the needs of daily life.

There are soups, and fish stews, which can come into the scheme of things, and which folk can learn about, if but the preacher, the local fishmonger, arise to tell of them.

The Problem of Boiled Fish

Take the case of the boiled fish, invariably, so badly is it done, all the fats are lost; as much as 14 to 30 per cent. of the solids are removed, and the valued minerals and salts are dissolved into the water, which is promptly thrown away in getting the fish out of the pot; the only possible thing received in return for the waste of good material is the salt that *may* have been added to the water.

which is treated thus.

The fish is dry and tasteless when it comes to table, unsatisfactory to all, but this would not matter so much were the bones collected and placed back in the water and the pot, with such other trimmings as were handy, with the intention of forming a stock for yet another dinner or a meal.

Yet are there houses, and families, where never any other method of cooking is known or has been used but this, with the result that fish days are looked upon as penance days, in which the body must be defrauded of its aliment, and a feeling of resentment aroused for the remainder of the day. A fish as food campaign can never be an accomplished fact along these lines.

Broiling.

We have already dealt slightly with the question of baking which, when well done, is one of the best forms of fish cooking, but there is another method, broiling, which is not so well known as it deserves, in fact is little practised. Broiling is usually looked upon as synonymous with grilling, but whilst the terms are interchangeable in ordinary usage, it would be well to differentiate between them, grilling being done on top, or above, the fire, and broiling in the front, a distinction with a great difference in results.

Everything grilled above the fire must necessarily lose all the juices and fats that drain from it, both those in the fish or other grilled substance, and whatever is placed upon them for the purpose of moistening; the spluttering-up of the fire in consequence in fierce streaks of flame, usually depositing upon the grilled substance a smoky appearance and taste.

An Old Broiler.

In the north, before ovens were common to each range, a broiler was used, a simple square tray of block tin, with its four sides turned up about three inches, and finished off with a wired edge; at the back and in the centre of it a round ring handle was riveted, made from a 3-inch strip of tin, also wire edged, of such a size that when in position the broiler, when placed upon the shelf usually attached to the stove, faced the fire at an angle of about forty-five degrees. In this a steak of cod, rashers of bacon, and such simple things, were placed; the liquor or juices extruded by the cooking ran to the bottom from where, unless a cinder had fallen in, they were basted back upon the fish or meat without waste or loss. A simple method of cooking that, with a little care, gave surprisingly good results. The American or Dutch oven was a variant or development of this, and was very effective for many forms of cooking, the hanging joint in particular, giving to the small user some of the advantages of the big roasting outfit of the gentlemen's house, but for fish it was not so well suited.

A Better Broiler.

A far better method than either was a broiler that had a limited sale a few years since, in the 'eighties, and would, with modern methods of pushing, probably make a way for itself. It opened to the fire, standing squarely and uprightly on its framework, the bottom sloped upwards some three inches from the front to the back, whilst the top sloped downwards at a somewhat sharper rake, the two sides being upright. It will be seen that both top and bottom, being of bright block tin, were of the nature of reflectors, the one gathering heat and throwing it upwards, the other deflecting it downwards. At the level of the highest part of the bottom reflector some slight iron bars were fixed from side to side, and upon these the tin which was to hold the material to be cooked was placed. If a circular tin were used for the purpose, and for several reasons this was best, the sloping top, which was top and reflector in one, and was hinged at the front, was lifted up from behind, and the plate, or the fish or meat on the plate, was adjusted as required. This form of broiler any tinman would make for two or three shillings, and it would solve some problems of fish cooking effectually and well.

The Values of Broiling.

The advantages to the fish, cooked in this way, are many. According to the heat of the fire it is quickly browned; the pores being sealed against evaporation, the steam is imprisoned, and by its aid thorough cooking is expedited. Such fat and juices as are in the fish, and escape, are held in the tin beneath, and can be used to baste with as desired. The fish tastes of the fire, as is said, an added invitation to an appetite for the person of weak or indifferent health. Nothing is lost at all except whatever steam escapes, and what is paid for that the customer is able to eat without waste. Sauces are little needed, the extracts from the fish, added to the basting fats, supplying all that is necessary.

Cut fish, or whole fish, up to the limits of size, may be used with equal advantage, the result being such as would induce a greater trade for fish and a greater pleasure in the eating of it, by all concerned.

It is not contended that fish constitutes the ideal food for all sorts and conditions of men under all circumstances. Such special pleading would defeat the end aimed at, but that it is possible to adapt the fish of the sea to the needs of men upon the land, and that without doing violence to the actual demands of the human system, these pages have been written to demonstrate and prove.

Cooking and the Cook.

One other matter remains to be noticed, the eater is one thing, the cook is another; that which the cook does not desire, or like, the diner should not express a wish for, otherwise the results are apt to prove unsatisfactory.

Before educating the parlour one must start with the kitchen, for whom the dining-room too often exists, and the trouble is not a new one; it is world old, and therefore one which should, and must, be recognised in any scheme of betterment that may be designed. The technical schools are advancing with their teaching and propaganda work, but the syllabuses are too often designed without collaboration with the practical mind as distinct from the purely academic intelligence, with results which might otherwise be obviated.

And the Cookery Classes.

The men in charge are usually broad-minded, and would welcome reasonable suggestions as the writer can testify. With such it would be easy to arrange that the cookery classes should include such simple things as a fried herring, a baked haddock, a broiled plaice or slice of cod, in their curriculum, a pie in which conger eel, or whiting and pollack figured, and other simple, economical, but useful things for home as well as for the kitchen, and for such things the trader could well offer prizes of small sums or articles. The community would be benefited, and the trade in the long run would receive an advantage, whilst the master, or mistress, would not need to say with Martial, "I prefer that the courses at our banquet should give pleasure to the guests rather than to the cooks."

CHAPTER XXIII

THE TARRY TASTE IN FISH

From time to time the fishmonger is troubled with complaints from his customers as to the taste of tar apparent in the fish when it is cooked and brought to table, and invariably he is at a loss to account for its occurrence.

The usual deduction made by the customer is that the fish is not fresh, and that it has been washed in disinfectant in consequence—a double charge which, like many another, has neither rhyme nor reason to support it, and is very hard to contradict. In such cases the facts stand for little, the *one* fact of the taste being amply sufficient.

A Theory for its Cause.

At one time the writer had a theory that this taste was caused by the condition of the fish, it having been noted on several occasions to be present with a lemon sole or plaice which had passed the pink of condition, and whose roe-cavity with its covering was thin and sloppy in consequence. Whilst this is disproved, he is still of opinion that a fish in this condition more readily assimilates the odour than one which is rotund, hard, firm, and in perfect seasonal health.

Found in Salmon.

The complaint is not confined to ordinary fishes, it has extended in experience to the salmon also. It is difficult to connect the two classes of fishing to one common cause, and customers who might have happened to have the same flavour with both salmon and sole could be excused if they connected the occurrence with some special treatment in the fishmonger's shop. As is said, one smell is set up to put down another, so the resultant proves that a less odorous, but even more harmful, prior condition of the fish also existed.

The Fishing Net.

The connecting link between the two classes of fish is the net, and this in many cases has been the cause of the trouble. The manufacturers and the fishermen are always on the look-out for a more effective, also less costly, method of tanning their nets; these are one part of a boat's outfit which exceeds in cost the boat itself, for the boat, if new, remains a good boat for years, but the nets are always being renewed, and the loss, in the smaller boats especially, often amounts to, if it does not exceed, the cost in one year of the boat itself.

Naturally any advantage which can be given is taken, with the result that this composition, and the other, may be placed upon the market, or a new plan may be tried by the fishermen, in which oil of tar in some form is used.

In time, undoubtedly, the oil is washed out, leaving behind that which is innocuous, but until then every fish coming into contact with the net extracts some proportion of the compound and retains it, to give it out again when opportunity offers.

How the Salmon is Tainted with the Tar.

If the salmon were taken directly from the net, as soon as caught, the scales would possibly act as a sufficient safeguard, but the fish may stay till morning; the scales are rubbed off by the movement of the fish and the water, and the result is trouble to the customer, and the fishmonger, at a future date.

Other specifics have come to the front for preserving nets from rotting out before their time, but that the tar-oil products are still in use for salmon-netting is certain, from the number of quite recent complaints concerning salmon which have been so affected.

The Use of Tar on Board Ship.

As to the sea-fishing nets in general, tar, or tar derivatives, are but little used, but in all matter of repairs, and making the boat weather-proof, tar forms the principal cement.

All caulking between seams, all patchings of timbers, in fact everything which is undertaken about a wooden boat, receives assistance from the tar-brush, with the effect that it is bespattered everywhere. Here, again, the oil in time is dissipated, leaving the substance, which is of a pitchy nature, behind, but until then any fish which happens to lie upon it receives a quantum which it will give out again at the improper moment.

The taint being of comparatively rare occurrence, the fishmonger does not smell each fish which passes through his hands to test it for tar-oil, and if he did, such are the qualities of it that it remains quiescent until heat has developed the flavour, a condition which the fishmonger can verify for himself when passing a tarred fence upon a warm day.

It is this peculiarity that accounts for the fact that the smell is never detected by either fishmonger or cook; no one is aware of it until it is ready to be placed, or is served, upon the table.

Boat Owners could assist.

This is a matter which the various trawl-owners' associations might well take cognisance of, for even though tar be necessary a little more care could be taken with it, and for the parts of the vessel which the fish must come into contact with, some other form of caulker could probably be used.

Occurs on Wooden Vessels Principally.

We believe that it arises mainly on the wooden boats, the need not existing for it on the iron vessels to anything like the same extent, but even there the indiscriminate using of the tar brush might be minimised, or more care taken afterwards to keep the fish from contact with it.

Care also wanted in the Shop.

To prevent anything happening which could be attributed to the shop itself, or its management, it is well for the fishmonger to forbid the use of all disinfectants about the premises, otherwise than borax or boric acid — these are not cleaners, and are useless except in company with a good scrubbing. There is no real use for disinfectants in the fishmongers' shop; they possess high sounding names which promise much, and which sometimes delude with the idea that by their use the fish shop will cease to be a fish shop—but this is impossible.

The Need of Cleaning.

What *is* possible is, that a shop shall be first designed to meet the needs of the business, and afterwards that cleaning shall be continuous, and such as will prevent accumulation of odours, because the cause of them is removed daily.

The fish-smell is persistent, it is true, but building materials, if rightly chosen, are no more pervious to fish smells than to any other; these are but superficial, and being that, can be removed without any difficulty.

No Soap.

Another thing to be guarded against is the use of soap upon the fish block, or in the vicinity of the fish, especially soap of the carbolic flavour, such as is often used for scrubbing up.

If this is left lying about, especially upon wood, the taint is left behind, to be promptly taken up by the next fish which lies there, although the soap may have been removed in the interim.

How to correct that Tarry Taste.

The tarry taste in fish is just one of those incidents that one must grin and bear. The customers complain—well and good. Cross the item off without demur, or replace it with something else; explain how unavoidable the incident is from your point of view, and they, as reasonable beings, will accept the explanation and the apology, and speedily forget because you did not make them, the perfectly innocent party, bear the onus of the loss of the discredited piece of fish. Of such sacrifices are great tradesmen made.

CHAPTER XXIV

THE NEED OF A STANDARD

The writing and publishing of these volumes upon the fish trade can have no greater claim to the support of the trade for whom they are written than this, that they seek by their teaching to set up a standard of practice and of custom, which shall be something to attain unto for those workers who are students concerning all that appertains to their business.

Each phase of that business has had, or will have, its chapter or section devoted to it, but these will fail of their purpose unless the reader marks the standard of them, and lives and works henceforth to surpass it.

It is reasonable, says Horace, that every one should measure himself by his own standard and measurement. We do not deny the reasonableness of this, but we have to assert, the Roman poet notwithstanding, that there is a need for a standard before the measurement can begin.

The Fixing of a Standard.

From nothing nothing can proceed. Without a standard man knows not his need, and it is just the fixing of the standard which is the matter of supreme importance. How will you fix it? The truth is, you never will, it must ever be shifting upwards.

The artist views his work, and it is good; the true artist looks at his last creation in the light of new ideas, and is dissatisfied; thus we have seen the greatest art critic of any day enraptured in one volume, but scorning himself in the next; his criticism was true to time and place, until he had found a yet higher expression of art, thus ever and always following the hand which beckoned him, his course of criticism was upward and onward.

The Standard for the Shop.

The staff shall always have clean boots, and living up to that decree, the degree of cleanliness demanded must always be a higher one.

The shop, or store, must be clean, its baskets scrubbed, and all its appointments up to the mark, and the mark is to be the mark that you yourself have set up.

It is not definable perhaps, but nothing will ever come below it, and all that is above is at least one step higher, a standard by which to work for the future. In a weekly paper of a few months since a somewhat startling headline was to been seen—

"The Great Meat Scandal.

The Need of Reform in Handling Meat and Fish at the London Markets."

Beyond a photograph of a typical Billingsgate porter carrying a *turn* of plaice, there was little in it to betoken the author's knowledge of Billingsgate conditions, and little that he could find fault with, and with all due deference, little that could be bettered when, as he says, "by the porters, within three to five hours, some 800 to 1,500 tons of fish are distributed!"

As to the meat markets we offer no opinion, they are not within our purview, but the article generally serves to emphasise the fact that a standard of cleanliness is desirable, that the public is being educated up to it, and in our opinion, rightly so.

As an outcome of this deeper interest in the subjects, there is a Pure Food and Health Society, which is doing propaganda work in this direction, work that, so far as the fishmonger is concerned, should be entirely unnecessary.

The need of a standard does not stop at cleanliness, it embraces every sphere of the weekly work—the quality of the goods that are sold, the quality of the cleaning which prepares them, the quality of the service which delivers them, and so on throughout all the departments downwards.

Cultivate a shudder which starts unbidden when anything falls below, or is less than the standard, and the dissatisfaction engendered will result in a shifting ever higher of the niche, or notch, that represents for the time being, the best, the highest that you know.

CHAPTER XXV

THE TRANSPORTING OF FISH

A SUBJECT this deserving of more than a passing reference in view of the extreme tenderness of all fish and the possibilities of harm attaching to them in consequence.

It is not proposed to give here more than a passing reference to the need for speed in transit from place to place, from ship to shore, from port to public, but we have seen how the herring trade has assumed its present magnificent proportions, and that without trenching upon the wealth of the sea which is left behind, by the installation upon the ships, first, of steam, and later, of the adaptations of the motor engine to the smaller types of boats.

The Motor Boat.

An adverse wind with a cargo on board in the old days meant over-day fish or salted fish, in either case a loss, or, as the writer has seen whilst busy with this volume, a crowd of boats held on shore with a bay teeming with herring, and only one small motor boat able to proceed to the fishing regardless of the wind, or the direction from which it was blowing.

Nature has given with one hand, but withholds with the other, herself keeping the key, or hiding it, and calling upon the ingenuity of man to circumvent her wiles.

Delay means Loss.

The railway system has accomplished great things with its "rights of way" threading the land in every direction, but in this connection much remains to be accomplished, much that will not be achieved until it is realised that every agency through whose hands the fish pass is but a trustee for the people, to whom is given, for the time being, the custody of food — a portion of the only true wealth of the world—for its satisfactory distribution without loss. A conception this of the duty imposed upon every one engaged in the "apostolic occupation of trafficking in fishes," which, if rightly appreciated, would lead to a resolve that not a fin of any fish henceforth should, for any cause, be classified as waste, or be allowed to be condemned.

Economic Losses from Various Sources.

There is economic waste in the destruction of material things of every description, but by far the greater is the irremediable loss of that which man did not create, cannot replace, and cannot bring again, or reproduce in the scheme of life.

Viewed thus, it might appear that the railway companies, taking their work as a whole, are not as great offenders as the many who, by carelessness, neglect, or lack of appreciation of facts and conditions, allow a waste to occur which, if little in itself, aggregated throughout the trade, makes a vast shrinkage in the available food of the nation.

Wilfulness—its Interpretation in Railway Law.

But this, however, does not exonerate the companies from the charge of carelessness in handling of fish which means loss, a charge to which they will always remain open whilst the law allows them to escape by the plea that the damage done was not wilful, and that, if it was, the consignee must prove the wilfulness.

We have seen an oblong box packed with punnets of strawberries, the first of the season's crop, lifted into the brake-van on end, slewed around, and dropped!

We have seen the package marked "Eggs" lifted out of the truck and put on the floor with a jar such as was not fitting for anything of less friability than a parcel of shoe leather or motor tyres.

For these things, and worse, there is no redress, because it would be impossible to prove that the handlers were inspired by hate, or wilfulness, to bring the loss about, as though the nature of the goods, and the flagrant violation of it, did not constitute a wilfulness without further ado or proof.

The Careless Transport of Fish.

After such things as these it is but a small thing that one should see boxes of tender fibred fish, which have been packed in cases suited to them, stood up endwise in a truck or on a station platform, the soft fish, whiting for instance, packed in one end, having to bear the weight of the superincumbent load thus unfairly placed upon them, and for which mangling no remedy is obtainable.

The fact that fish is placed in an oblong box should be evidence enough in itself that the only proper way of transit is by standing it like the tub "on its own bottom."

As a remedy for these and such like carelessnesses it is useless to distribute handbills in huts and porters' rooms, whilst officialdom looks on totally unconcerned, troubling not at all, although knowing full well that the damage which arises must be borne by the consignee, and that the company cannot be made to suffer except by the wasting of time that is occupied in sending a stereotyped letter in reply to the complainant.

The Railways as a Commercial Proposition.

The writer has the greatest regard for the rights of the railway companies, recognises to the full that they are commercial undertakings whose directors have to do their best to make the business pay, but the linking up of the railways into one Management Committee will eventually bring into the field, as one federated whole, the business of the country in self-defence, and in that federation the fish trade must have a representation such as befits its importance to the nation at large.

How the Merchant can Assist.

Not every ill arising out of improper transport is to be laid to the charge of the railway companies. There are many minor, and, in the aggregate, greater troubles for which the merchant is responsible.

There is the question and system of the description of empties used, in which one sized box is made to do for many differing weights or bulks of fish; for one order the lid must be forced on, for others the contents must roll about with every shifting or up-ending of the package, or a top-load of fish is balanced on and covered with a piece of hessian, inviting any careless handler thereafter to place a weighty package on it, to the detriment of the goods within and beneath.

In the kit package this is not a matter of such great moment, the narrower base making the package, whilst sufficiently stable in itself, tend to a top-heaviness which may easily lead to over-turning should a weight be placed upon it, and as this would necessitate the expenditure of muscle-force to again lift it into position, the package is respected. One would prefer a more secure wrapper or covering than the hessian, but, taken all in all, the kit is one of the most satisfactory packages for ordinary goods that is used.

Examples of Good Packing from Scotland.

It is good, however, to give especial notice of the thorough way in which the leading Aberdeen firms have arisen to the needs of the transport business, one or two in particular. For every possible size of order there is a special package; the one-salmon, two-salmon, three-salmon box is ready for each need as it arises.

Every combination of stones of dried fish has its special package, non-returnable, and bearing in full, plain, branded lettering the firm's name, and often the contents as well.

The package in itself is as fine an advertisement as the business can have, both at the sending and the receiving end, the sender for the admirable way in which his work is done, and the receiver that his goods are conveyed in packages that are a credit to his shop.

The Non-Returnable Empty.

The system solves in itself some problems otherwise difficult. The packages are handy and, therefore, escape the violence of treatment meted out to bulky packages by the owners of unwilling arms and muscles. The boxes will stack up tidily, and are therefore economical of space, a consideration for both transport contractors and the receivers, and, further, the storage of empties, their subsequent return, and the expense of it is saved. As with the handy kipper-box, the work is done for which it was made; henceforth it may be used to grow seeds or to light a fire as the second or third stage of usefulness in life, without being a bother or a nuisance to any one.

Undoubtedly the non-returnable box is the package of the future, and the consistent use of it will place the sending firms in a position of priority, as well as of superiority.

In such sending districts and ports where the non-returnable is as yet unknown, it would be well for the merchants to consider the question of transport, and once for all break away from any blundering, happy-go-lucky methods which are productive of unnecessary loss to the receivers. They should consider the goods, not from the point of view of despatch, but rather of arrival, and not with the unexpressed thought that now the goods are forwarded there is only the money to be sent back for them. Eventually there will be no money to be returned, or if there is, the retailer is receiving so much the less for his labours and risks than is his due—an altogether inequitable condition of affairs, which it should be the duty of the merchant straightforward to remedy, even if until now the full results of a want of care have not declared themselves to him.

The Retailer's Share in the Problem.

The retailer, however, is not free from the charge of laxity and want of care on the subject of transport, the chief of his misdeeds being the failure to look ahead, and to comprehend the vicissitudes that his package and goods are liable to before they reach their destination. By messenger, by carrier, by motor, by train—not yet by aeroplane—are his goods forwarded, and for the great majority of articles, one style of packing will not suit all the agencies equally well.

The package handed to a messenger who will not need to place it out of his hands before placing it in the hands of the recipient can be quite a different package from the one handed to a carrier, whilst this in its turn would be useless for a journey by rail, or, worse still, for conveyance over two lines of rail with a cartage communication between them.

Thought for the Receiving End.

"In what condition will the packages arrive?" This is the question that should face the person charged with their dispatch, and the corollary to it, "How will the goods appear when they are unpacked?" Paper-bag carriers are useful and, independently, are inexpensive items; for a short journey, for dry goods, or goods which have been sufficiently dried, they may present an admirable form of conveyance, but a very little damp present with the goods, or that can be acquired on the journey, will make that journey an expensive one, because goods and package will soon part company, even assuming those goods to have been of such a nature that a modified form of a paper bag was the best method to employ for the purpose.

Mat baskets, the special distinguishing carrier of the fishmonger, the one which no gentleman scorns to carry, however much he may disdain the package of brown paper, is, without doubt, the most useful, as it can be the most expensive form of carrier used. It does not readily break, burst, or come asunder, although the side stitching needs some oversighting and the handles some amount of strengthening at times. It will take the fish and carry a little ice, and can be so sewn up that any movement of the goods inside is prevented.

Limitations of the Mat Basket.

But here, again, are limitations; the curled whiting or even a fresh haddock, packed in a mat basket and sent by rail, stands a chance of arriving crushed and broken, and therefore useless.

In the days when the country trade was more important than it is now, shallow, oval, lidded baskets of various sizes were used, and the packing of the cleaned and prepared fish within them was an art that seems to have been lost in the modern rush and idea of "get the thing done quick," which rules in far too many establishments. Not that the doing of a thing well takes any longer; with a true conception of what has to be done, combined with a knowledge of how to do it, the right way is as quick as the wrong way, and the satisfaction of the doing of it immeasurably greater.

How will the Goods arrive?

Unfortunately the "get it done quick" idea has evolved yet another, unexpressed, but still existent, "get it out of my way," forgetting altogether that the business is not done with when the package is thrust outside the shop. The trouble is not ended there and then—in fact it has not yet begun, neither will it, until the goods, or what is left of them, arrive at their destination; the end of the story is in the word "Finis" written across many an account, and closing the record of many a good customer.

Some Queries for the Packer.

"How will the goods arrive?"—Faint and flagging for the want of a little ice to keep them fresh? Injured, because a rusty two-inch nail was driven through the thin lid to fasten the label on? With the lid or side all broken because the weight within was greater than could be resisted with the small tacks or brads which were supposed to hold the sides of the box in position? Pilfered, because two strings only were used to fasten the basket-lid, leaving a gaping portion through which any one could easily help themselves, and did it, because of the open invitation? Empty, because instead of each tie being made securely for itself, the fastening string went around the basket and was fastened at one of the two ends by what proved to be "a granny's knot"? And there are other things which can happen, but these suffice, and from them all there is relief and release by the asking of one simple question and insisting upon a reply, "How will the goods and the packages arrive?"

"How do you box your goods?" was one of the earliest catch phrases in an advertisement which the writer remembers, and anything more *apropos* to the question at issue cannot be conceived. In the question itself, and its answer, lies a whole body of the doctrine of business, a question that should be written in letters of red above every fish-packer's counter or block.

The questions of transport are many, from the sailing-boat, which fails to reach the harbour with its live freight in time for beach or dock, to the fresh haddock, which a wilful messenger ties with tightened string to the handle-bar of a bicycle, causing the loss of a customer—the retailer is concerned in them all. Some he cannot avoid—he is not the controlling power. Others are avoidable—over these he is all-powerful, and it remains for him to build up in his business the tradition by which it shall be directed and the actions of every servant shall be governed.

This is not the chapter in which to point out the need of applying the same rule to the fish itself, that what may be good enough now, whilst it is in the shop or the ice-box, may be indifferent or worse when it reaches its destination, but the same guiding words will suffice for the situation when it arises; not, "What is the fish now?" but "How—in what state—will the goods arrive?" By that standard will your business be judged, and by it, with your business, will you stand or fall.

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